
Draft Environmental Impact Report

PREPARED FOR

SONOMA COUNTY
DEPARTMENT OF TRANSPORTATION & PUBLIC WORKS

BOHEMEIAN HIGHWAY BRIDGE OVER RUSSIAN RIVER REPLACEMENT PROJECT

Bridge #20C0018
04-SON-0-CR

State Clearinghouse SCH #2021030538

April 2022

Sonoma County Permit and Resource Management Department
Natural Resources Division
2550 Ventura Avenue
Santa Rosa, California 95403



Draft Environmental Impact Report Table of Contents

| | |
|--|--------|
| Executive Summary Table of Contents | ES-i |
| Executive Summary | ES-1 |
| Project Synopsis | ES-1 |
| Project Objectives..... | ES-2 |
| Alternatives..... | ES-2 |
| Areas of Known Controversy | ES-3 |
| Summary of Impacts and Mitigation Measures | ES-3 |
| Introduction Table of Contents | 1-i |
| 1 Introduction | 1-1 |
| 1.1 Statement of Purpose | 1-1 |
| 1.2 EIR Content and Format | 1-2 |
| 1.3 Existing Conditions and Baseline | 1-2 |
| 1.4 Public Review and Participation Process | 1-3 |
| 1.5 Scope and Content | 1-10 |
| 1.6 Lead, Responsible, and Trustee Agencies | 1-11 |
| 1.7 Environmental Review Process | 1-12 |
| Project Description Table of Contents | 2-i |
| 2 Project Description | 2-1 |
| 2.1 Project Sponsor | 2-1 |
| 2.2 Lead Agency Contact Person | 2-1 |
| 2.3 Project Background, Location, and Purpose and Need | 2-1 |
| 2.4 Project Objectives | 2-7 |
| 2.5 Existing Site Characteristics..... | 2-8 |
| 2.6 Project Description..... | 2-9 |
| 2.7 Required Approvals..... | 2-19 |
| Environmental Setting Table of Contents | 3-i |
| 3 Environmental Setting..... | 3-1 |
| 3.1 Regional Setting | 3-1 |
| 3.2 Project Site Setting | 3-1 |
| 3.3 Cumulative Development | 3-1 |
| Environmental Impact Analysis Table of Contents | 4-i |
| 4 Environmental Impact Analysis | 4-1 |
| 4.1 Aesthetics | 4.1-2 |
| 4.1.1 Setting | 4.1-2 |
| 4.1.2 Scenic Zoning | 4.1-3 |
| 4.1.3 Light and Glare | 4.1-11 |
| 4.1.4 Regulatory Setting | 4.1-11 |
| 4.1.5 Impact Analysis | 4.1-16 |
| 4.1.6 Cumulative Impacts | 4.1-23 |
| 4.2 Agriculture and Forestry Resources | 4.2-1 |
| 4.2.1 Setting | 4.2-1 |

| | | |
|--------|---------------------------------------|---------|
| 4.2.2 | Regulatory Setting | 4.2-5 |
| 4.2.3 | Impact Analysis | 4.2-10 |
| 4.2.4 | Cumulative Impacts..... | 4.2-12 |
| 4.3 | Air Quality | 4.3-1 |
| 4.3.1 | Setting | 4.3-1 |
| 4.3.2 | Regulatory Setting | 4.3-5 |
| 4.3.3 | Impact Analysis | 4.3-8 |
| 4.3.4 | Cumulative Impacts | 4.3-15 |
| 4.4 | Biological Resources | 4.4-1 |
| 4.4.1 | Setting | 4.4-2 |
| 4.4.2 | Regulatory Setting | 4.4-24 |
| 4.4.3 | Impact Analysis | 4.4-30 |
| 4.4.4 | Cumulative Impacts | 4.4-55 |
| 4.5 | Cultural Resources | 4.5-1 |
| 4.5.1 | Setting | 4.5-1 |
| 4.5.2 | Regulatory Setting | 4.5-11 |
| 4.5.3 | Impact Analysis | 4.5-15 |
| 4.5.4 | Cumulative Impacts | 4.5-21 |
| 4.6 | Energy | 4.6-1 |
| 4.6.1 | Setting | 4.6-1 |
| 4.6.2 | Regulatory Setting | 4.6-3 |
| 4.6.3 | Impact Analysis | 4.6-7 |
| 4.6.4 | Cumulative Impacts | 4.6-9 |
| 4.7 | Geology and Soils | 4.7-1 |
| 4.7.1 | Setting | 4.7-1 |
| 4.7.2 | Regulatory Setting | 4.7-8 |
| 4.7.3 | Impact Analysis | 4.7-11 |
| 4.7.4 | Cumulative Impacts | 4.7-20 |
| 4.8 | Greenhouse Gas Emissions | 4.8-1 |
| 4.8.1 | Setting | 4.8-1 |
| 4.8.2 | Regulatory Setting | 4.8-6 |
| 4.8.3 | Impact Analysis | 4.8-11 |
| 4.8.4 | Cumulative Impacts | 4.8-15 |
| 4.9 | Hazards and Hazardous Materials | 4.9-1 |
| 4.9.1 | Setting | 4.9-1 |
| 4.9.2 | Regulatory Setting | 4.9-5 |
| 4.9.3 | Impact Analysis | 4.9-8 |
| 4.9.4 | Cumulative Impacts | 4.9-14 |
| 4.10 | Hydrology and Water Quality | 4.10-1 |
| 4.10.1 | Environmental Setting | 4.10-1 |
| 4.10.2 | Regulatory Setting | 4.10-9 |
| 4.10.3 | Impact Analysis | 4.10-14 |
| 4.10.4 | Cumulative Impacts | 4.10-21 |
| 4.11 | Land Use and Planning | 4.11-1 |
| 4.11.1 | Setting | 4.11-2 |
| 4.11.2 | Regulatory Setting | 4.11-3 |
| 4.11.3 | Impact Analysis | 4.11-13 |
| 4.11.4 | Cumulative Impacts | 4.11-15 |
| 4.12 | Mineral Resources | 4.12-1 |
| 4.12.1 | Setting | 4.12-1 |
| 4.12.2 | Regulatory Setting | 4.12-1 |

| | | |
|--------|--|---------|
| 4.12.3 | Impact Analysis | 4.12-3 |
| 4.13 | Noise | 4.13-1 |
| 4.13.1 | Setting | 4.13-1 |
| 4.13.2 | Regulatory Setting | 4.13-5 |
| 4.13.3 | Impact Analysis | 4.13-8 |
| 4.13.4 | Mitigation Measures | 4.13-17 |
| 4.13.5 | Cumulative Impacts | 4.13-17 |
| 4.14 | Population and Housing | 4.14-1 |
| 4.14.1 | Setting | 4.14-1 |
| 4.14.2 | Regulatory Setting | 4.14-4 |
| 4.14.3 | Impact Analysis | 4.14-7 |
| 4.14.4 | Cumulative Impacts | 4.14-8 |
| 4.15 | Public Services and Recreation | 4.15-1 |
| 4.15.1 | Setting..... | 4.15-1 |
| 4.15.2 | Regulatory Setting | 4.15-6 |
| 4.15.3 | Impact Analysis | 4.15-9 |
| 4.15.4 | Cumulative Impacts | 4.15-18 |
| 4.16 | Transportation | 4.16-1 |
| 4.16.1 | Setting..... | 4.16-1 |
| 4.16.2 | Regulatory Setting | 4.16-3 |
| 4.16.3 | Methodology | 4.16-4 |
| 4.16.4 | Impact Analysis | 4.16-6 |
| 4.16.5 | Cumulative Impacts | 4.16-11 |
| 4.17 | Tribal Cultural Resources | 4.17-1 |
| 4.17.1 | Setting | 4.17-1 |
| 4.17.2 | Regulatory Setting | 4.17-2 |
| 4.17.3 | Regional Tribal Cultural Resource | 4.17-2 |
| 4.17.4 | Impact Analysis | 4.17-3 |
| 4.17.5 | Cumulative Impacts | 4.17-5 |
| 4.18 | Utilities and Service Systems | 4.18-1 |
| 4.18.1 | Setting..... | 4.18-1 |
| 4.18.2 | Water Regulatory Setting | 4.18-3 |
| 4.18.3 | Wastewater Regulatory Setting..... | 4.18-5 |
| 4.18.4 | Stormwater Drainage Regulatory Setting..... | 4.18-6 |
| 4.18.5 | Electric Power and Natural Gas Regulatory Setting..... | 4.18-6 |
| 4.18.6 | Telecommunication Regulatory Setting | 4.18-7 |
| 4.18.7 | Solid Waste Regulatory Setting | 4.18-7 |
| 4.18.8 | Impact Analysis | 4.18-10 |
| 4.18.9 | Cumulative Impacts | 4.18-12 |
| 4.19 | Wildfire | 4.19-1 |
| 4.19.1 | Setting..... | 4.19-1 |
| 4.19.2 | Regulatory Setting | 4.19-6 |
| 4.19.3 | Impact Analysis | 4.19-10 |
| 4.19.4 | Cumulative Impacts | 4.19-12 |

| | |
|---|-----|
| Other CEQA Required Discussions Table of Contents | 5-i |
|---|-----|

| | | |
|-------|---|-----|
| 5 | Other CEQA Required Discussions | 5-1 |
| 5.1 | Cumulative Impacts | 5-1 |
| 5.2 | Growth-Inducing Impacts | 5-1 |
| 5.3 | Irreversible Environmental Effects | 5-2 |
| 5.3.1 | Significant and Unavoidable Impacts | 5-2 |

| | |
|---|------|
| Alternatives Table of Contents | 6-i |
| 6 Alternatives | 6-1 |
| 6.1 Alternative 1: No-Project | 6-1 |
| 6.1.1 Description | 6-1 |
| 6.1.2 Impact Analysis | 6-2 |
| 6.2 Alternatives Considered but Eliminated from Further Analysis | 6-6 |
| 6.3 Alternative 2: Rehabilitation/Retrofit | 6-6 |
| 6.3.1 Description | 6-6 |
| 6.4 Alternative 3: Replace and Retain | 6-7 |
| 6.4.1 Description | 6-7 |
| 6.5 Alternative 4: Replace and Remove (Alignment Options) | 6-7 |
| 6.5.1 Description | 6-7 |
| 6.5.2 Replacement Alignments Considered but Eliminated from Further Discussion | 6-8 |
| 6.6 Environmentally Superior Alternative | 6-9 |
| References Table of Contents | 7-i |
| 7 References | 7-1 |
| 7.1 Bibliography | 7-1 |
| 7.2 List of Preparers | 7-20 |

Tables

Executive Summary

| | |
|---|------|
| Table ES-1 Summary of Environmental Impacts, Mitigation Measures, and Residual Impacts..... | ES-4 |
|---|------|

Introduction

| | |
|---|-----|
| Table 1-1 NOP Comments and EIR Response | 1-4 |
|---|-----|

Environmental Impact Analysis

| | |
|--|--------|
| Table 4.1-1 Site Sensitivity Criteria | 4.1-17 |
| Table 4.1-2 Site Sensitivity and Dominance Ratings | 4.1-19 |
| Table 4.1-3 Sonoma County Visual Analysis Significance Matrix | 4.1-19 |
| Table 4.2-1 2020 Sonoma County Crop Values | 4.2-1 |
| Table 4.2-2 Sonoma County Farmland Mapping and Monitoring Program Distribution | 4.2-4 |
| Table 4.2-3 Sonoma County Farmlands Change by Land Use Category from 2014-2016 | 4.2-5 |
| Table 4.3-1 Federal and State Ambient Air Quality Standards | 4.3-2 |
| Table 4.3-2 Ambient Air Quality at Sonoma County Monitoring Stations | 4.3-5 |
| Table 4.3-3 BAAQMD Criteria Air Pollutant Significance Thresholds | 4.3-10 |
| Table 4.3-4 BAAQMD Odor Source Thresholds | 4.3-11 |
| Table 4.3-5 BHB Reconstruction Construction Period Emissions | 4.3-13 |
| Table 4.4-1 Special-Status Plant Species with Potential to Occur in the BSA | 4.4-12 |
| Table 4.4-2 Special-Status Wildlife Species with Potential to Occur in the BSA | 4.4-14 |
| Table 4.4-3 Potential waters of the U.S/State and CDFW Jurisdictional Areas..... | 4.4-24 |
| Table 4.4-4 Potential Impacts to Waters of the U.S./State within USACE, RWQCB and CDFW Jurisdictional Areas | 4.4-48 |
| Table 4.5-1 Structures Over 45 Years of Age | 4.5-11 |
| Table 4.6-1 Annual and Daily Transportation Energy Consumption in Sonoma County..... | 4.6-2 |
| Table 4.7-1 Potential Site Areas Subject to Mitigation | 4.7-17 |
| Table 4.8-1 Estimated Construction GHG Emissions | 4.8-14 |

| | |
|--|---------|
| Table 4.10-1 Beneficial Use | 4.10-5 |
| Table 4.10-2 Russian River Waterbody Impairments | 4.10-5 |
| Table 4.13-1 AASHTO Maximum Vibration Levels for Preventing Damage | 4.13-3 |
| Table 4.13-2 Human Response to Steady State Vibration | 4.13-4 |
| Table 4.13-3 Human Response to Transient Vibration | 4.13-4 |
| Table 4.13-4 Maximum Allowable Exterior Noise Exposures for Non-transportation Noise Sources | 4.13-7 |
| Table 4.13-5 Vibration Levels Measured during Construction Activities | 4.13-10 |
| Table 4.13-6 HVAC Noise Levels | 4.13-11 |
| Table 4.13-7 Existing and Future Traffic Volumes (PM Peak Hour) ¹ | 4.13-12 |
| Table 4.14-1 Population in Unincorporated Sonoma County (2010 – 2019) | 4.14-1 |
| Table 4.14-2 Households in Unincorporated Sonoma County and the Rest of Sonoma County (as a Whole) | 4.14-2 |
| Table 4.14-3 Housing Units in Unincorporated Sonoma County Defined by Units Per Structure .. | 4.14-3 |
| Table 4.14-4 Unincorporated Sonoma County 2019 Population, Housing, and Employment and 2040 Projections | 4.14-3 |
| Table 4.14-5 Unincorporated Sonoma County Regional Housing Needs Assessment | 4.14-5 |
| Table 4.15-2 Enrollment Data | 4.15-2 |
| Table 4.18-3 Solid Waste Disposal Operations | 4.18-2 |

Alternatives

| | |
|---|------|
| Table 6-1 Impact Comparison of Alternatives | 6-11 |
|---|------|

Figures

Introduction

| | |
|---|------|
| Figure 1-1 Environmental Review Process | 1-14 |
|---|------|

Project Description

| | |
|--|------|
| Figure 2-1 Regional Location | 2-2 |
| Figure 2-2 Project Location | 2-4 |
| Figure 2-3 Project Area | 2-5 |
| Figure 2-4 Bohemian Highway Bridge – Representative Photographs | 2-6 |
| Figure 2-5 Draft Visual Simulation of Proposed Steel-tied Arch Bridge, looking east from Sandy Beach* | 2-9 |
| Figure 2-6 Proposed Replacement Bridge Profile | 2-10 |
| Figure 2-7 Proposed Roadway and Bike Lane Section | 2-11 |

Environmental Impact Analysis

| | |
|---|--------|
| Figure 4.1-1 Northern Bridge Approach – Before | 4.1-5 |
| Figure 4.1-2 Northern Bridge Approach – After | 4.1-5 |
| Figure 4.1-3 Sandy Beach – Before | 4.1-6 |
| Figure 4.1-4 Sandy Beach – After | 4.1-6 |
| Figure 4.1-5 Big Rocky Beach – Before | 4.1-7 |
| Figure 4.1-6 Big Rocky Beach – After | 4.1-7 |
| Figure 4.1-7 Bohemian Highway – Before | 4.1-8 |
| Figure 4.1-8 Bohemian Highway – After | 4.1-8 |
| Figure 4.1-9 Southern Bridge Approach – Before | 4.1-9 |
| Figure 4.1-10 Southern Bridge Approach – After | 4.1-9 |
| Figure 4.1-11 Moscow Road – Before | 4.1-10 |
| Figure 4.1-12 Moscow Road – After | 4.1-10 |
| Figure 4.2-1 Important Farmlands Near Project Site | 4.2-3 |
| Figure 4.4-1 Biological Study Area | 4.4-2 |
| Figure 4.4-2 Vegetation Communities and Cover Classes | 4.4-8 |

| | |
|--|--------|
| Figure 4.4-3 Potential United States Army Corps of Engineers and Regional Water Quality Control Board Jurisdiction | 4.4-23 |
| Figure 4.4-4 Potential California Department Fish and Wildlife Jurisdiction | 4.4-23 |
| Figure 4.4-5 Potential Impacts to Potential U.S. Army Corps of Engineers and Regional Water Quality Control Board OHWM Jurisdiction | 4.4-47 |
| Figure 4.4-6 Potential Impacts to CDFW Jurisdictional Areas | 4.4-48 |
| Figure 4.5-1 Archaeological and Build Environment Area of Potential Effects Map | 4.5-10 |
| Figure 4.7-1 Fault mapping | 4.7-4 |
| Figure 4.7-2 Site Geologic mapping | 4.7-5 |
| Figure 4.10-1 Russian River Watershed | 4.10-2 |
| Figure 4.10-2 Receiving Water Bodies in Project Vicinity | 4.10-3 |
| Figure 4.10-3 FEMA Floodplain Map | 4.10-9 |
| Figure 4.11-1 Existing Zoning | 4.11-2 |
| Figure 4.19-1 Fire Hazard Severity Zones – Countywide | 4.19-4 |
| Figure 4.19-2 Fire Hazard Severity Zones – Project Site | 4.19-5 |

This page intentionally left blank

Executive Summary Table of Contents

Executive Summary ES-1
 Project SynopsisES-1
 Project Objectives.....ES-2
 Alternatives..... ES-2
 Areas of Known ControversyES-3
 Summary of Impacts and Mitigation MeasuresES-3

Tables

Table ES-1 Summary of Environmental Impacts, Mitigation Measures, and Residual
 ImpactsES-4

Executive Summary

Pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15123, this summary provides information about the environmental impact report (EIR) prepared by Sonoma County Department of Transportation and Public Works (County) for the proposed replacement of the Bohemian Highway Bridge. This section summarizes the characteristics of the proposed Project, alternatives to the proposed Project, and the environmental impacts and mitigation measures associated with the proposed Project.

Project Synopsis

Project Applicant

Sonoma County Department of Transportation and Public Works Department (DTPW) (County)
2300 County Center Drive
Santa Rosa, California 95403
(707) 565-2231

Lead Agency Contact Person

Jackson Ford, Sr. Environmental Specialist
Permit and Resource Management Department, Natural Resources
County of Sonoma
2550 Ventura Avenue
Santa Rosa, California 95403
(707) 565-8356

Project Description Summary

This EIR has been prepared to examine the potential environmental effects of replacement of the existing bridge on Bohemian Highway over the Russian River. The following is a summary of the full project description, which can be found in Section 2.0, *Project Description*.

The County proposes to remove the existing bridge on the Bohemian Highway over the Russian River and construct a new bridge on an alternate alignment (Figure 2). The replacement bridge structure would be approximately 846 feet long and composed of the following:

- The south approach would be a continuous cast-in-place concrete post-tensioned slab structure with three spans ranging from 60 to 65 feet long.
- The main span over the Russian River would be a 390-foot long steel tied arch structure. The peak of the arch would be approximately 65 feet high above the deck.
- The north approach would be a continuous cast-in-place concrete post-tensioned box girder structure with three spans ranging from 80 to 85 feet long.

The proposed bridge would be designed to meet the current AASHTO bridge design standards and the seismic design would be in accordance with the Caltrans Seismic Design Criteria and Seismic Design for Steel Bridges. The bridge would vary in width, from approximately 52 feet at the approaches to approximately 60 feet at the main span. The bridge would be supported on concrete

piers with deep, large diameter cast-in-drilled-hole piles, embedded up to approximately 120 feet below the riverbed. Rock slope protection (RSP) would be installed at both abutments for scour protection.

The proposed roadway would be designed to provide a multimodal route for vehicles, bicycles, and pedestrians. The proposed alignment for the Bohemian Highway Bridge would connect to Main Street west of the existing bridge and east of Moscow Road, and terminate at SR 116 to the north. The proposed roadway cross section (Figure 3) would accommodate two 12-foot vehicular lanes (one lane in each direction), concrete barriers, the steel arch members, and 5-foot shoulders/Class II bike lanes and 6-foot pedestrian sidewalks on both sides of the bridge.

The Project construction is estimated to be completed over three consecutive years. Traffic will continue to use the existing bridge in years one and two. For the third year, traffic would be switched to new bridge as the old structure is deconstructed. Construction would occur year round, with in channel and over water work occurring in the low flow summer months. Construction related Best Management Practices will avoid or minimize environmental impacts associated with the Project.

Project Objectives

1. To provide a bridge that meets current seismic design standards, as failure or collapse of the existing bridge from an earthquake would cause long-term disruption to travel, emergency response, evacuation, and the local economy.
2. To provide a bridge that meets current design standards for vehicular loading
3. To provide a bridge that does not overtop during high river flows
4. To provide a bridge that meets current standards for two-way vehicle traffic
5. To provide a bridge with sidewalks that meet current ADA standards
6. To provide a bridge that meets current design standards for bicycle lanes

Alternatives

As required by the California Environmental Quality Act (CEQA), this EIR examines alternatives to the proposed Project. Studied alternatives include the following four alternatives. Based on the alternatives analysis, alternative 1 No Project would have the least immediate environmental impacts, and of the potential projects analyzed alternative 4 to Replace and Remove was determined to be the environmentally superior alternative.

1. Alternative 1: No Project
2. Alternative 2: Retrofit of the Existing Bridge
3. Alternative 3: Replace and Retain
4. Alternative 4: Replace and Remove
 - Five preliminary alignment options were analyzed under the remove and replace alternative.

Alternative 1 No Project, refers to the analysis of existing conditions and what would reasonably be expected to occur in the foreseeable future if the Project was not approved, based on current plans and consistent with available infrastructure and community services. The No Project Alternative represents the continuation of use of the current structure, as it exists currently.

Alternative 2: Rehabilitation/Retrofit would include the rehabilitation of the existing bridge to meet current seismic and minimum vehicular loading standards. A primary goal of a rehabilitation project would be to preserve the character of the bridge, a designated County landmark.

Alternative 3: Replace and Retain option would include the construction of a separate vehicular bridge and retain the existing bridge for pedestrian and bicycle use. With pedestrian use, public safety must be maintained, and therefore an option without retrofit would not be acceptable.

Alternative 4: Replace and Remove option would include the construction of a new bridge, and removal of the existing bridge. The option would remove all elements of the existing bridge except potentially the abutments, which may remain in place. A number of replacement bridge alignment options were considered as part of the replace and remove alternative. The case was made based on environmental impacts, engineering feasibility, the defined project objectives and public input via community work shops that the chosen alignment is the superior alternative.

Refer to Section 6, *Alternatives*, for the complete alternatives analysis.

Areas of Known Controversy

State CEQA Guidelines Section 15123(b) requires that a summary section include a description of areas of controversy known to the lead agency, including issues raised by agencies and the public; and issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant impacts. Known areas of controversy include emergency vehicle access, a bridge fully accessible and traversable by all vehicle types and modes of transportation, beach access for recreational activities at the Project site, the preservation of swallow nesting habitat and the preservation of cultural and historic resources.

Responses to the Notice of Preparation of a Draft EIR and input received at the EIR scoping meeting held by the City are summarized in Section 1, *Introduction*.

Summary of Impacts and Mitigation Measures

Table ES-1 summarizes the environmental impacts of the proposed Project, proposed mitigation measures, and residual impacts (the impact after application of mitigation, if required). Impacts are categorized as follows:

1. **Significant and Unavoidable.** An impact that cannot be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the Project is approved per CEQA Guidelines Section 15093.
2. **Less than Significant with Mitigation Incorporated.** An impact that can be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires findings under CEQA Guidelines Section 15091.
3. **Less than Significant.** An impact that may be adverse but does not exceed the threshold levels and does not require mitigation measures. However, mitigation measures that could further lessen the environmental effect may be suggested if readily available and easily achievable.
4. **No Impact:** The proposed Project would have no effect on environmental conditions or would reduce existing environmental problems or hazards.

Table ES-1 Summary of Environmental Impacts, Mitigation Measures, and Residual Impacts

| Impact | Mitigation Measure (s) | Residual Impact |
|--|---|------------------------------|
| Aesthetics | | |
| <p>Impact AES-1. The Project will remove the existing Bohemian Highway Bridge and replace it with a new bridge.</p> | <p>AES-1 Construction Requirements for Visual Impacts. The following measures to avoid, minimize, and mitigate for visual impacts would be incorporated into the Project:</p> <ul style="list-style-type: none"> • Staging areas would be fenced to reduce visibility and would be kept clean and orderly. Soil and debris piles would be covered when not in active use. • Vegetation removal would be minimized to the extent feasible. Vegetated areas temporarily disturbed by the Project would be restored following project construction using a context sensitive design that is visually compatible with the surrounding landscape and consistent with existing policy regarding wetlands protection and buffers. • Trees that require removal during project construction would be replaced in the Project area at a minimum of a 1:1 ratio. | <p>Less than significant</p> |
| <p>Impact AES-2. The Project is located within the boundaries of the State 116 Scenic Corridor. The Project will remove the historic Bohemian Highway Bridge and replace it with a new bridge. Additional resources in the corridor would not be damaged during construction activities.</p> | <p>Refer to AES-1: Construction Requirements for Visual Impacts.</p> | <p>Less than significant</p> |
| <p>Impact AES-3. The replacement of the bridge with a new bridge would not substantially degrade existing visual character of public views of the site or its surroundings. The Project would not conflict with applicable zoning or other regulations.</p> | <p>Refer to AES-1: Construction Requirements for Visual Impacts.</p> | <p>Less than significant</p> |
| <p>Impact AES-4. Project construction could create new sources of light or glare that could adversely affect the visual environment</p> | <p>Refer to AES-1: Construction Requirements for Visual Impacts.</p> | <p>Less than significant</p> |
| Agriculture and Forestry Resources | | |
| <p>Impact AG-1. The Project does not occur on land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, the Project would not convert these types of lands to non-agricultural use. None of the lands are under Williamson Act contract and thus, these lands under this protection would not be converted to non-agricultural use.</p> | <p>None required</p> | <p>No impact</p> |

| Impact | Mitigation Measure (s) | Residual Impact |
|---|------------------------|-----------------|
| Impact AG-2. The Project site is not situated in areas zoned for timberland production (TPZ) and, therefore, the Project would not conflict with existing zoning for, or cause rezoning of, forestland, timberland, or timberland zoned Timberland Production. The Project would not result in the loss of forest land or conversion of forest land to non-forest use. | None required | No impact |
| Impact AG-3. The Project would not result in changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use | None required | No impact |

Sonoma County
 Bohemian Highway Bridge over the Russian River Replacement Project

| Impact | Mitigation Measure (s) | Residual Impact |
|--|--|------------------------------|
| Air Quality | | |
| <p>Impact AQ-1. The project would not conflict with any applicable air quality plan.</p> | <p>None required.</p> | <p>No impact</p> |
| <p>Impact AQ-2. The Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.</p> | <p>None required.</p> | <p>No impact</p> |
| <p>Impact AQ-3. Sensitive Receptors may be exposed to temporary construction generated pollutants. Construction would temporarily increase air pollutant emissions, possibly creating localized areas of unhealthy air pollution levels or air quality nuisances.</p> | <p>AQ-1 Basic Construction Mitigation Measures</p> <p>The Project shall be required to reduce construction emissions of reactive organic gases, nitrogen oxides, and particulate matter (PM₁₀ and PM_{2.5}) by implementing the BAAQMD’s Basic Construction Mitigation Measures (described below) or equivalent, expanded, or modified measures based on project and site specific conditions.</p> <ul style="list-style-type: none"> • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day, with priority given to the use of recycled water for this activity when feasible. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered. • All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping shall be prohibited. • All vehicle speeds on unpaved roads shall be limited to 15 mph and Contractor must install and maintain appropriate speed limit signage where appropriate. • All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. • Idling times for all construction-related diesel and gasoline powered engines when not in operation including worker vehicles shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes. Clear signage regarding idling shall be provided for construction workers at all times. • All construction equipment shall be maintained and properly tuned in accordance with manufacturer’s specifications. All equipment | <p>Less than significant</p> |

| Impact | Mitigation Measure (s) | Residual Impact |
|---|---|------------------------------|
| | <p>shall be checked by a certified mechanic or certified visible emissions evaluator and determined to be running in proper condition prior to operation. The Lead Agency shall post a publicly visible sign with the telephone number and person to contact regarding dust complaints. Any complaint received must be responded to immediately and corrective action must be taken within 48 hours.</p> | |
| <p>Impact AQ-4. Implementation of the project would not create objectionable odors that could affect a substantial number of people.</p> | <p>None required</p> | <p>Less than significant</p> |
| <p>Biological Resources</p> | | |
| <p>Impact BIO-1. The proposed Project could have a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status species.</p> | <p>BIO -1 General Mitigation Measures The following general mitigation measures shall be implemented:</p> <ul style="list-style-type: none"> • A worker environmental awareness training (WEAT) conducted by a qualified biologist will be conducted to educate any onsite personnel expected to be onsite for 30 minutes or more about special-status wildlife species and their habitat within the Project area. The WEAT shall instruct workers on how to recognize potentially occurring special-status plant/wildlife species and their preferred habitat potentially present in the project site, applicable laws and regulations regarding each species, actions to take if a special-status species is observed during construction activities including the name/contact information of the monitoring biologist, and the nature and purpose of protective measures including best management practices (BMPs) and other required mitigation measures. The WEAT shall include information about sensitive resource areas (including wetlands and waters of the U.S/state), to avoid within the Project site other than where impacts have been authorized, and relevant laws and regulations for each resource. • Preconstruction surveys will be conducted by a qualified biologist for any sensitive species and those individuals will be relocated to nearby habitat (if deemed appropriate by the biologist). The biologist shall be on-site during all construction events to ensure that sensitive species are avoided to the maximum extent practicable to minimize potential harmful effects. • To protect the riparian plant community, the limits of work areas will be designated with ESA | <p>Less than significant</p> |

| Impact | Mitigation Measure (s) | Residual Impact |
|--------|--|-----------------|
| | <p>fencing or flagging materials and will be reduced to the extent feasible.</p> <ul style="list-style-type: none"> • Vegetation removed would be limited to the extent possible and would follow Caltrans Standard Specifications for Clearing and Grubbing and Roadside Clearing. • All project-related vehicle traffic would be restricted to established roads and construction areas, which include equipment staging, storage, parking, and stockpile areas. • All project-related vehicle traffic would be restricted to 5 miles per hour within all work areas. • No pets would be allowed in the construction area, to avoid and minimize the potential for harassment, injury, and death of wildlife. • Nighttime construction would only be authorized by the County for select activities on a case-by-case basis, such as a bridge pour, in coordination with a qualified biologist. | |
| | <p>Bio 2 - Erosion And Sediment Control Mitigation Measures Erosion control measures and Best Management Practices (BMPs) shall conform to the provisions in the Caltrans Standard Specifications and the special provisions included in the contract for the Project. Such provisions include the preparation of a Storm Water Pollution Prevention Plan (SWPPP), which describes and illustrates the of best management practices (BMPs) in the Project site. Erosion control measures to be included in the SWPPP or to be implemented by the County include the following:</p> <ul style="list-style-type: none"> • BMPs, such as silt fencing, fiber rolls, and straw bales, shall be implemented prior to ground disturbance and during construction of the proposed Project to minimize dust, dirt, and construction debris from entering the waterways and/or leaving the construction area • Activities that increase the erosion potential in the Project area shall be restricted to the relatively dry summer and early fall period to minimize the potential for rainfall events to transport sediment to surface water features. In channel waterway construction will be conducted from June 15-October 15, or until the start of the wet season as stipulated by the regulatory permitting agencies. Upland construction will likely occur throughout the year as long as work activities comply with the <u>BMPs and mitigation measures identified herein for the protection of sensitive or special-status plant or animal species. For upland construction activities that must take place during the late fall, winter, or spring, then temporary erosion and sediment control structures shall be in place and operational at the end of each construction day and maintained until permanent erosion control structures are in place.</u> | |

| Impact | Mitigation Measure (s) | Residual Impact |
|--------|---|-----------------|
| | <ul style="list-style-type: none"> <li data-bbox="646 275 1268 562">• At completion of each construction season and in those areas where subsequent ground disturbance will not occur for 10 calendar days or more, weed-free mulch shall be applied to disturbed areas to reduce the potential for short-term erosion. Prior to a rain event or when there is a greater than 50 percent possibility of rain within the next 24 hours, as forecasted by the National Weather Service, weed-free mulch shall be applied to all exposed areas upon completion of the day's activities. Soils shall not be left exposed during the rainy season. <li data-bbox="646 598 1260 842">• Suitable BMPs, such as silt fences, straw wattles, or catch basins, shall be placed below all construction activities at the edge of surface water features to intercept sediment before it reaches the waterway. These structures shall be installed prior to any clearing or grading activities. Further, sediment built up at the base of BMPs will be removed before BMP removal to avoid any accumulated sediments from being mobilized post-construction <li data-bbox="646 877 1260 1251">• All dewatering activities will be conducted in compliance with the Caltrans Field Guide for Construction Site Dewatering and Section 13- 4.03G of the Caltrans Standard Specifications. Water removed from the excavated area for pier and abutment footings or construction shall be pumped to a temporary sediment retention basin outside of the channel, through a mechanized water filtration system, into baker tanks or similar storage system or trucked offsite to an authorized disposal site. If a temporary basin is constructed, it shall be located outside of the active channel and include sediment sock or similar sediment control on the discharge. <li data-bbox="646 1287 1260 1509">• If spoil sites are used, they shall be located such that they do not drain directly into a surface water feature, if possible. If a spoil site drains into a surface water feature, catch basins shall be constructed to intercept sediment before it reaches the feature. <u>Spoil sites shall be graded and vegetated with native species, or covered by other means to reduce the potential for erosion.</u> <li data-bbox="646 1545 1260 1692">• <u>Sediment control measures shall be in place prior to the onset of the rainy season typically October 15th and will be monitored and maintained in good working condition until disturbed areas have been stabilized with mulch, or other erosion control materials.</u> | |

| Impact | Mitigation Measure (s) | Residual Impact |
|--------|---|-----------------|
| | <p data-bbox="630 275 1104 329">BIO-3: Accidental Spill and Pollution Prevention Mitigation Measures</p> <p data-bbox="630 333 1198 564">Appropriate hazardous material BMPs would be implemented to reduce the potential for chemical spills or contaminant releases into the waterways, including any non-storm water discharge. Construction specifications shall include the following measures to reduce potential impacts to vegetation and aquatic habitat resource in the Project area associated with accidental spills of pollutants (e.g., fuel, oil, asphalt and grease):</p> <ul data-bbox="667 596 1300 1764" style="list-style-type: none"><li data-bbox="667 596 1203 884">• A site-specific spill prevention plan shall be prepared, approved by the County and implemented for potentially hazardous materials. The plan shall include the proper handling and storage of all potentially hazardous materials, as well as the proper procedures for cleaning up and reporting any spills. If necessary, containment berms shall be constructed to prevent spilled materials from reaching surface water features<li data-bbox="667 919 1203 999">• Where feasible, equipment and hazardous materials shall be stored at least 50 ft. away from water features<li data-bbox="667 1035 1203 1472">• All equipment refueling and maintenance would be conducted in the upland staging area a minimum of 50 feet from the top of bank Russian River and Dutch Bill Creek. In addition, vehicles and equipment would be checked daily for fluid and fuel leaks, and drip pans of absorbent material would be placed under all equipment within 50 feet of the flowing water of the Russian River and Dutch Bill Creek that is parked and not in operation. Leaking vehicles or equipment would not be operated until repaired. All workers would be informed of the importance of preventing spills and the appropriate measures to take should a spill happen.<li data-bbox="667 1507 1203 1656">• When feasible, equipment operating below the top of bank shall use non-toxic vegetable oil or <u>similar non-toxic alternative for operating hydraulic equipment opposed to traditional hydraulic fluids that can contain a wide range of chemical compounds.</u><li data-bbox="667 1692 1300 1764">• Place plastic materials (or similar) under asphaltic concrete (AC) paving equipment when not in use, to catch and/or contain drips and leaks. | |

| Impact | Mitigation Measure (s) | Residual Impact |
|--------|---|-----------------|
| | <ul style="list-style-type: none"> • During demolition of the existing road and bridge, all grindings and asphaltic-concrete (AC) waste would be immediately moved offsite or be temporarily stored onsite, above top of bank. If the waste is stored onsite, the waste would be placed on construction grade plastic sheeting, geotextile fabric, or similar impervious material, and would be stored a minimum of 50 feet from the top of bank of the Russian River or Dutch Bill Creek. AC grindings, pieces, or chunks used in embankments or shoulder backing must not be allowed to enter any storm drain or watercourses. Install silt fence until structure is stabilized or permanent controls are in place. On or before the date of Project completion, the waste would be transported to an approved disposal site. • Collect and remove all broken asphalt and recycle when practical, or as required by regulations; otherwise, dispose in accordance with Standard Specifications and to an appropriately permitted site. Surplus concrete rubble or pavement shall either be disposed of at an acceptable and legally permitted disposal site or taken to a permitted concrete and/or asphalt recycling facility. • Use only non-toxic substances to coat asphalt transport trucks and asphalt spreading equipment. • Do not allow Portland Concrete Cement (PCC) or slurry to enter storm drains or watercourses. • No equipment, including concrete trucks, will be washed in a location where wash water could drain into surface waters. • Any construction equipment operating upon work pads or adjacent to the Russian River or Dutch Bill Creek shall be inspected daily for leaks. External oil, grease, and mud shall be removed from equipment and disposed of properly. Spill containment booms shall be maintained onsite at all times during construction operations and/or staging of equipment or fueling supplies. Fueling trucks shall maintain adequate spill containment materials at all times. Any contaminated gravels on the work pad shall be removed from the site and disposed of in a permitted manner. • The contractor shall develop and implement site-specific BMPs, a water pollution control plan, and emergency spill control plan. The contractor shall be responsible for immediate containment and removal of any toxins released. | |

| Impact | Mitigation Measure (s) | Residual Impact |
|--------|------------------------|-----------------|
|--------|------------------------|-----------------|

BIO-4: Riparian Habitat Replacement

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

- When feasible, riparian vegetation will be trimmed rather than removed outright and/or be cut at grade to allow for stump re-sprouting.
- Prior to construction, high visibility Environmentally Sensitive Area (ESA) protective fencing would be installed per the plans, at the limits of construction to prevent construction staff or equipment from further encroaching on Russian River, Dutch Bill Creek, and the adjacent riparian habitat and ensure that impacts to riparian vegetation outside of the construction area are minimized. The exclusionary fencing shall be inspected and maintained on a regular basis throughout Project construction.
- Riparian habitat areas temporarily disturbed shall be replanted using riparian species that have been recorded along the Russian River and Dutch Bill Creek areas, including species such as willow (*Salix exigua*, or *S. laevigata*), white alder, California bay, big leaf maple, and Oregon ash.
- All nursery plants used in restoration will be inspected for sudden oak death prior to planting. Vegetation debris shall be disposed of properly and vehicles and equipment shall be free of soil and vegetation debris before entering natural habitats. Pruning tools shall be sanitized before use.
- Mitigation for permanent impacts to riparian habitat, will be accomplished through one or more of the following: (1) on-site mitigation; (2) the purchase of in-lieu fees; (3) off-site mitigation; and/or (4) purchase of mitigation bank credits. In any case, replacement mitigation will be at a minimum ratio of 3:1 for permanent impacts and 1:1 for temporary impacts and may include exotic plant removal and riparian species revegetation, depending on the selected scenario and location.
- Restoration monitoring will occur following establishment of revegetation following construction. Monitoring would be conducted for approximately 5 years, or as stipulated by regulatory agencies during the permitting process. At a minimum, the monitoring surveys will consist of evaluation survival and health of plantings, evaluation for signs of drought and/or disease stress, weed or herbivory problems, and presence or trash or other debris. The monitoring plans would require a minimum of 80% survival.

| Impact | Mitigation Measure (s) | Residual Impact |
|--------|------------------------|-----------------|
|--------|------------------------|-----------------|

BIO-5 Special-Status Plant Mitigation

Rare plant surveys were conducted within the entire BSA in 2021 and no special-status plants were observed. Rare plant surveys are generally accepted by the regulatory agencies for approximately three years. To insure that no special-status plants are impacted by the Project, the following mitigation measures shall be implemented:

- A qualified botanist will conduct rare plant surveys within the construction area, as needed. Surveys would be conducted during the appropriate blooming period in the year prior to construction for species with potential to be in the construction area, to the extent feasible. If any special-status plant species is found during pre-construction surveys, high visibility ESA protective fencing would be installed around the special-status plants to prevent construction staff or equipment from entering this area, to the maximum extent feasible. The ESA protective fencing buffer would be species specific, with a minimum buffer radius based on the guidance from a qualified biologist. The biological monitor would be responsible for directing the implementation of additional avoidance measures, as needed.
- If it is determined that special-status plants will be directly impacted by the Project, a species-specific mitigation plan will be prepared by a qualified biologist. The plan may include one or more of the following: plant relocation, seed collection and dispersal, on or off-site restoration, or payment into an agency-approved mitigation bank. The plan will be implemented prior to the completion of the Project.

| Impact | Mitigation Measure (s) | Residual Impact |
|--------|--|-----------------|
| | <p>BIO-6 Prevention of Invasive Species Spread Mitigation The following measures shall be implemented to prevent the spread of invasive species in the action area:</p> <ul style="list-style-type: none"> • All equipment used for off-road construction activities will be weed-free prior to entering the construction area. • If Project implementation calls for mulches or fill, they will be weed free. • New revegetation materials, would be composed of non-invasive species and would be clear of weeds, and all erosion control and landscape planting would be conducted in a manner that would not result in the spread of invasive species. • Any seed mixes or other vegetative material used for re-vegetation of disturbed sites will consist of locally adapted native plant materials. • Any personal equipment (including boots/waders), construction materials (falsework members, sand bags, etc.) and construction equipment would be properly disinfected or cleaned according to the most current guidance provided by the State of California Aquatic Invasive Species Management Plan prior to in-channel work to prevent the spread of aquatic invasive species. | |
| | <p>BIO-7 Salmonids and Special-Status Fish Species Mitigation</p> <ul style="list-style-type: none"> • A NMFS /CDFW approved biologist would be onsite during construction activities that could impact the federally and/or state listed fish species. The biologist would provide on-site guidance to limit disturbance to the species and its habitat. • Any structure/culvert placed within a waterway where fish do/may occur shall be designed, constructed, and maintained such that they do not constitute a barrier to upstream or downstream movement of aquatic life or cause an avoidance reaction by fish that impedes their upstream or downstream movement. This includes, but is not limited to, the supply of water at an appropriate depth, temperature, and velocity to facilitate upstream and downstream fish migration. For this Project, this equates to designing the culverts to meet guidelines outlined in NMFS (2001). | |

| Impact | Mitigation Measure (s) | Residual Impact |
|--------|--|-----------------|
| | <ul style="list-style-type: none"> • Impacts to herbaceous cover will be offset by reseeded any unvegetated and impacted areas with a suitable seed mixture post construction. • To the maximum extent feasible, all of the interstitial spaces of the RSP will be buried below grade to allow for revegetation. • A NMFS /CDFW approved biologist would walk in and/or adjacent to the Russian River, as feasible, alongside equipment to minimize/avoid fish entrapment during gravel work pad installation. The biologist would have the authority to pause work to allow fish to navigate away from the site, or to investigate the gravel work pad for potential entrapment. The biologist would implement safe monitoring practices by remaining visible to the operator at all times, maintaining a safe distance from equipment (to be established using standard safety protocols and in coordination with the operator), and remain in constant communication with the operator during work. • A capture and relocation plan for special-status aquatic species would be developed by a qualified biologist prior to construction. • By October 15, the temporary culverts, pipe, and in-stream work pads shall be removed from the channel. The gravel work pad shall be excavated down to the point at which there is a thin veneer remaining on the existing channel bed. Upon removal of the culverts and clean gravel, hand crews may redistribute the remaining gravel such that it does not become a barrier to the free passage of water or the movement of fish and aquatic animals. It shall not impede, or tend to impede, the passage of fish at any time, pursuant to Fish and Game Code Section 5901. • Take or suspected take of special-status fish and wildlife species would be reported immediately to a qualified biologist. The NMFS /CDFW approved biologist would report the incident, or suspected incident, to the wildlife agencies within 24 hours. | |
| | <p>BIO-8 Mitigation for Amphibians and Reptiles</p> | |
| | <ul style="list-style-type: none"> • A pre-construction survey for California giant salamander, foothill yellow-legged frogs, red-bellied newts and western pond turtles will be implemented prior to the onset of Project construction. A qualified biologist shall conduct a minimum of one survey of the BSA for these | |

| Impact | Mitigation Measure (s) | Residual Impact |
|--------|--|-----------------|
| | <p>species. The survey shall be conducted a maximum of one week prior to construction. If individuals of any of these species are found within a construction impact zone, the individual(s) shall be allowed to move away on its own. If the individual does not move away on its own, the biologist shall move it to a safe location with suitable habitat up or downstream of the construction area. Relocation sites shall be based upon the qualified biologist's experience working with the species, and coordination with regulatory agencies, as necessary.</p> <ul style="list-style-type: none"> • If a pond turtle nest is found, the biologist shall flag the site and determine if construction activities can avoid affecting the nest. If the nest cannot be avoided, it will be excavated and re-buried at a suitable location outside of the construction impact zone by a qualified biologist. Any trapped, injured, or killed special-status amphibians or reptiles will be reported to CDFW. • If a California giant salamander, foothill yellow-legged frog, red bellied newt or western pond turtle is encountered during construction, activities in the vicinity shall cease until appropriate corrective measures have been implemented or it has been determined that the individual will not be harmed. Any frogs encountered during construction shall be allowed to move away on their own. Any trapped, injured, or killed special-status frogs shall be reported immediately to CDFW. • Materials stored below the top of bank could provide shelter for special-status amphibians or reptiles, such as on-site storage of pipes, conduits, and other materials, would be elevated above ground, where possible. • Trenches or pits one foot or deeper that are left unfilled for more than 48 hours would be securely covered with boards or other similar material to prevent entrapment of special-status amphibians, reptiles, or other wildlife. • No construction activities would be allowed during rain events, greater than 0.25 inch within 24 hours, or within 24-hours following a rain event. Prior to construction activities resuming, a qualified biologist would inspect the construction area and all equipment/materials for the presence of special-status amphibians and reptiles. | |

| Impact | Mitigation Measure (s) | Residual Impact |
|--------|------------------------|-----------------|
|--------|------------------------|-----------------|

- Plastic monofilament netting, or similar material in any form, would not be used at the construction area.

BIO- 9 Mitigation for sensitive Bat species

The following measures shall be implemented to prevent the impacts to bats:

- To the extent practicable, the removal of any large trees would be conducted outside of the breeding season of pallid bat and western red bat. For the purposes of implementation of this measure, the breeding season is considered to be from April 1 through August 15th.
- During the summer months (June 1 to August 15) prior to construction, visual surveys would be conducted at all identified roosting habitat to assess the presence of roosting bats. If presence of a roost is detected, an analysis would be completed to help assess the type of colony and usage.
- Prior to construction, and during the non-breeding and active season (typically October), bats would be safely evicted from roosts potentially directly impacted by the Project under the direction of a qualified biologist. Once bats have been safely evicted, exclusionary devices would be installed to prevent bats from returning and roosting in these areas. Roosts that would not be directly impacted by the Project would be left undisturbed.
- Trees designated for removal with potential day roosting habitat, would be removed using a two-step process. The tree removal would be conducted over two consecutive days under the supervision of a qualified biologist, as follows:
 - Step One - all non-habitat trees adjacent to and/or surrounding potential habitat trees, as identified by the qualified biologist, would be removed (or trimmed, if full removal can be avoided) on the first of the two days. In addition, limited trimming of the potential bat roosting habitat trees (branches and small limbs with no potential roosting features) would be completed on the first day. During Step one, construction crews would only use hand tools (i.e. chainsaws or similar).
 - Step two - on the calendar day immediately following step one, all of the potential habitat trees that were previously trimmed and/or avoided during step one would be removed

| Impact | Mitigation Measure (s) | Residual Impact |
|--------|------------------------|-----------------|
|--------|------------------------|-----------------|

BIO-10 Mitigation for Special-Status and Migratory Birds

Implementation of Mitigation Measure BIO-4 (Riparian Habitat) and replacement of landscape trees and vegetation, as described in Section 2.6, will minimize and mitigate the loss of tree nesting sites. Tree removal during times of nesting could result in negative effects to the young of nesting birds. The following avoidance and minimization measure will reduce any potential impact to breeding birds:

- Trimming and removal of vegetation and trees would be minimized and performed outside of the nesting season, after August 31 and before February 15, to the extent feasible when bird nesting is most likely avoided unless a qualified biologist has inspected the site and determined that the tree removal or trimming will not affect nesting birds.
- In the event construction work, including trimming or removal of vegetation and trees, must be conducted during the nesting season (February 15 to August 31), nesting bird surveys would be completed within 500 feet of the construction area, as feasible, by a qualified biologist no more than 72 hours prior to trimming or clearing activities to determine if nesting birds are within the vegetation that would be trimmed or removed. Nesting bird surveys would be repeated if trimming or removal activities are suspended for five days or more.
- If nesting birds are found within 500 feet of the construction area, appropriate buffers consisting of orange flagging/fencing or similar (typically 300 feet for birds and 500 feet for raptors) would be installed and maintained until nesting activity has ended, as determined in coordination with the Project biologist and regulatory agencies, as appropriate.
- During construction, the qualified biologist shall conduct regular monitoring (at CDFW approved intervals) to evaluate the nest(s) for potential disturbances associated with construction activities. Construction within the buffer shall be prohibited until the qualified biologist determines the nest is no longer active. If an active nest is found after the completion of the pre-construction surveys and after construction

| Impact | Mitigation Measure (s) | Residual Impact |
|---|--|------------------------------|
| | <p>begins, all construction activities shall stop until a qualified biologist has evaluated the nest and erected the appropriate buffer around the nest. If establishment of the buffer is not feasible, CDFW and/or USFWS shall be contacted for further avoidance and minimization guidelines.</p> <ul style="list-style-type: none"> Beginning February 1 of the season that the existing bridge will be demolished and removed, a bird barrier would be installed on the underside of the entire existing bridge structure sufficient to prevent birds from nesting. Wherever feasible, the barrier will consist of hard surface exclusionary materials (such as plywood or plexiglass) to prevent cliff swallows from nesting on areas of the bridges under construction. Where hard surface exclusionary materials cannot be effectively applied, netting can be used as an exclusionary material as a last resort. The bird barrier would be inspected, and repairs made as needed from installation until September 1 or until no longer needed. The barrier would be removed as needed to construct the Project. If the Project is not completed during the construction season following installation of the barrier, the barrier would be installed again beginning February 15 of the next year. The contractor will removing all unoccupied nests from previous years and any new starts from construction areas before swallows have completed nests. The biological monitor ensuring that there are no birds or eggs in nests that are removed. If netting is used, it will be installed and maintained in such a way as to avoid adverse impacts on bats. | |
| <p>Impact BIO-2. Construction, operation, and maintenance of the Project could impact riparian habitat or sensitive natural communities.</p> | <p>BIO-11 Waters of the U.S./Waters of the State and CDFW Jurisdictional Areas Mitigation Measures</p> <p>Mitigation for “waters of the U.S./state and CDFW jurisdictional areas include:</p> <ul style="list-style-type: none"> To the maximum extent practicable, activities that increase the erosion potential in the Project area shall be restricted to the relatively dry summer and early fall period to minimize the potential for rainfall events to transport sediment to surface water features. Construction within the low flow channel of the Russian River and Dutch Bill Creek would be limited to between June 15 and October 15. Work within the top of bank and outside of the low flow channel could begin on April 15, with implementation of BMPS and as approved by regulatory agencies during permitting. Upland | <p>Less than significant</p> |

| Impact | Mitigation Measure (s) | Residual Impact |
|--------|---|-----------------|
| | <p>construction will likely occur throughout the year as long as work activities comply with the conservation and avoidance and minimization measures identified herein and by regulatory permitting agencies for the protection of sensitive or special-status plant or animal species. For upland construction activities that must take place during the late fall, winter, or spring, then temporary erosion and sediment control structures shall be in place and operational at the end of each construction day and maintained until permanent erosion control structures are in place.</p> <ul style="list-style-type: none"> • Areas where any potential wetland or upland vegetation need to be removed shall be identified in advance of ground disturbance and limited to only those areas that have been approved by the County and regulatory agencies. • Within 10 days of completion of construction in those areas where subsequent ground disturbance will not occur for 10 calendar days or more, weed-free mulch shall be applied to disturbed areas to reduce the potential for short-term erosion. Prior to a rain event or when there is a greater than 50 percent possibility of rain within the next 24 hours, as forecasted by the National Weather Service, weed-free mulch shall be applied to all exposed areas upon completion of the day's activities. Soils shall not be left exposed during the rainy season. • Suitable BMPs, such as silt fences, straw wattles, or catch basins, shall be placed below all construction activities at the edge of surface water features to intercept sediment before it reaches the waterway. These structures shall be installed prior to any clearing or grading activities. These structures shall be installed prior to any clearing or grading activities. Further, sediment built up at the base of BMPs will be removed before BMP removal to avoid any accumulated sediments from being mobilized post-construction • If temporary stockpile sites are used, they shall be located such that they do not drain directly into a surface water feature, if possible. If a stockpile drains into a surface water feature, catch basins shall be constructed to intercept sediment before it reaches the feature. Stockpile sites shall be graded and vegetated to reduce the potential for erosion. | |

| Impact | Mitigation Measure (s) | Residual Impact |
|--|---|------------------------------|
| | <ul style="list-style-type: none"> Sediment control measures shall be in place prior to the onset of the rainy season and will be monitored and maintained in good working condition until disturbed areas have been revegetated. Any gravel material placed in the Russian River or Dutch Bill Creek would be washed at least once and have a cleanliness value of 85 or higher based on Caltrans Test No. 227. | |
| | <p>BIO-12 –Sensitive Natural Communities</p> <p>Sensitive Natural Communities Sensitive natural communities potentially impacted within the BSA include Oregon Ash Groves. Temporary impacts to Oregon Ash Groves will be mitigated with implementation of BIO-4 (Riparian Habitat). No jurisdictional wetlands meeting the USACE’s three-parameter definition were observed during biological surveys, however should any wetlands or any other sensitive natural communities develop or be delineated on site prior to construction, they would be replaced in-kind, on-site a minimum ratio of 1:1 or if off-site to ensure no net loss, as coordinated with regulatory agencies during permitting, per Executive Order 11990, Protection of Wetlands (1977). Other options may include off-site mitigation, in-lieu fees, mitigation bank, or purchase of lands or conservation easement as coordinated with the regulatory agencies during permitting. Areas restored on- or off-site will be monitored to ensure restoration success criteria put forth by regulatory agencies are met. All temporary impacts to sensitive natural communities shall be fully restored to natural conditions.</p> | |
| | <p>BIO-13 –Mitigation for Designated Critical Habitat and Essential Fish Habitat</p> <p>The Project site is within designated critical habitat for steelhead, Coho and Chinook salmon and within Essential Fish Habitat (EFH) for chinook and Coho salmon. Impacts to designated critical habitat and EFH salmonids will be mitigated with implementation of BIO-1 (General Mitigation Measures); BIO-2 Erosion and Sediment Control; BIO-3 Accidental Spill and Pollution Prevention; BIO-4 Riparian Habitat; BIO-7 (Salmonids and Special Status Fish Mitigation); and BIO-11 Waters of the U.S./Waters of the State and CDFW Jurisdictional Areas; and BIO-12 Sensitive Natural Communities.</p> | |
| <p>Impact BIO-3. Construction, operation, and maintenance of the Project would not impact jurisdictional state or federally protected wetlands during</p> | <p>BIO-14 Jurisdictional Delineation Verification</p> <p>The County will submit the GPA preliminary delineation of the waters of the U.S. and waters of the state, including USACE, RWQCB, and CDFW jurisdictional areas to each</p> | <p>Less than significant</p> |

Sonoma County
Bohemian Highway Bridge over the Russian River Replacement Project

| Impact | Mitigation Measure (s) | Residual Impact |
|--|--|------------------------------|
| <p>construction, operation, And/or maintenance</p> | <p>regulatory agency for review and approval and verification of the extent of the jurisdiction for USACE, RWQCB, and CDFW. While the preliminary delineation did not identify any areas meeting all three wetland criteria parameters, should any be wetland areas be identified and/or expected to be impacted, the following mitigation measures would be implemented:</p> <ul style="list-style-type: none"> • Avoidance and protection of any wetlands, to the maximum extent feasible and use of construction fencing to identify potential wetland areas as “environmental sensitive areas” to be excluded from construction activities • If any wetlands jurisdictional areas are expected to be impacted, then the appropriate regulatory agencies permits would be obtained prior to construction, including a USACE CWA Section 404 permit; a RWQCB Section 401 Water Quality Certification; and/or a CDFW Lake or Streambed Alteration Agreement pursuant to Section 1600 et seq. of the CFGC. • Mitigation for permanent impacts on wetland habitat, would be accomplished through one or more of the following: (1) on-site mitigation; (2) the purchase of in-lieu fees; (3) off-site mitigation; and/or (4) purchase of mitigation bank credits. Mitigation will be at a minimum ratio of 2:1 for permanent impacts and 1:1 for temporary impacts; however, the final ratio will be established through consultation and coordination with regulatory agencies during the permitting process. • General Avoidance and minimization measures, including those in BIO-1 through BIO 3, as well as: <ul style="list-style-type: none"> ○ Any material/spoils generated from Project activities shall be located away from jurisdictional areas or special status habitat and protected from storm water run-off using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls (non-monofilament), covers, sand/gravel bags, and straw bale barriers, as appropriate. <p>Materials shall be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage from contaminating the ground and generally at least 50 feet from the top of bank.</p> | |
| <p>Impact BIO-4. The Project would not interfere substantially with</p> | <p>Refer to Mitigation Measure BIO-1 (General Mitigation) Bio-2 (Erosion And Sediment Control Mitigation); BIO-3 (Accidental Spill and Pollution Prevention); BIO-4 (Riparian</p> | <p>Less than significant</p> |

| Impact | Mitigation Measure (s) | Residual Impact |
|---|---|-----------------|
| wildlife movements in the Project area. | Habitat) and BIO-7 (Salmonids and Special-status Fish) would reduce potentially significant impacts to wildlife and migratory fish to less than significant level. | |

Sonoma County
Bohemian Highway Bridge over the Russian River Replacement Project

| Impact | Mitigation Measure (s) | Residual Impact |
|--|--|------------------------------------|
| <p>Impact BIO-5. The replacement of the existing bridge would be subject to the County’s local policies and requirements protecting biological resources.</p> | <p>With implementation of BIO-1 (General Mitigation Measures); BIO-2 (Erosion and Sediment Control); BIO-3 (Accidental Spill and Pollution Prevention); BIO-4 (Riparian Habitat Replacement); BIO-5 (Special-status Plant Mitigation) and BIO-6 (Prevention of Invasive Species Spread); BIO-7 (Salmonids and Special Status Fish Mitigation); BIO-8 Amphibians and Reptiles Mitigation; BIO-9 (Bats); BIO-10 (Birds); BIO-11 (Waters of the U.S./Waters of the State and CDFW Jurisdictional Areas Mitigation Measures) and BIO-12 (Sensitive Natural Communities) BIO-14 (Jurisdictional Delineation Verification); and BIO-15 (Surplus Soil Disposal).</p> | <p>Less than significant</p> |
| <p>Impact BIO-6. The Project would not conflict with any approved local, regional or state habitat conservation plan.</p> | <p>None required</p> | <p>No impact</p> |
| <p>Cultural Resources</p> | | |
| <p>Impact CUL-1. The project has the potential to cause a significant impact on a historic resource if the project would cause a substantial adverse change in the significance of that resource.</p> | <p>CUL-1 Architectural History Mitigation Cultural Resource Mitigation Measure CUL-1 Architectural History: Prior to implementing the proposed project, the DTPW shall provide an evaluation of the Bohemian Highway Bridge that includes a final historical documentation and a photographic archive of the bridge. The evaluation shall address the bridge in the context of the structure including photo-documentation and additional historical research necessary to complete the State of California’s Department of Parks and Recreation 523 forms, which constitute official documentation of historical resources for the State Office of Historic Preservation. Copies of documentation shall be provided to the Northwest Information Center (NWIC) of the California Historical Resources Information System, including the History Annex of the Sonoma County Library.</p> | <p>Significant and unavoidable</p> |

| Impact | Mitigation Measure (s) | Residual Impact |
|--|---|------------------------------|
| <p>Impact CUL-2. The project has the potential to cause a significant impact on archaeological resources if the project would cause a substantial adverse change in the significance of an archaeological resource.</p> | <p>CUL-2 Extended Phase I Testing</p> <p>The project APE has been identified as sensitive by the Phase I Archaeological Survey Report (ASR). Sonoma County DTPW shall retain a qualified archaeologist to conduct an Extended Phase I (XPI) study to determine the presence/absence and extent of archaeological resources on the project site. The XPI proposal will be submitted to the Federal Funding agency (Caltrans Local Assistance) for review and approval as part of Section 106 of the NHPA. The proposal and subsequent testing should comprise a series of shovel test pits and/or augured units and/or mechanical trenching to establish the presence or absence, as well as the potential boundaries of archaeological site(s) on the project site. The qualified archaeologist and the Lead Agency (County) shall confer with local California Native American tribe(s) and any XPI work plans may be combined with a tribal cultural resources plan prepared under Mitigation Measure TCR-3, as indicated in section 4.17 of this EIR. A Tribe appointed Native American monitor may be present during the XPI study in accordance with Mitigation Measure TCR-4. TCR measures are discussed in detail within Section 4.17- Tribal Cultural Resources.</p> <p>All archaeological excavation shall be conducted by a qualified archaeologist(s) under the direction of a principal investigator meeting the SOI’s PQS for archaeology (National Park Service 1983). If an XPI report is prepared, it shall be submitted to Sonoma County for review and approval prior to the start of any construction activities. Interested tribes shall be consulted for comments on the final XPI report as part of AB52 and Section 106 of the NHPA consultations. Recommendations contained therein shall be implemented for all ground disturbance activities.</p> <p>CUL-3 Archaeological Site Avoidance</p> <p>Any identified archaeological sites (determined after implementing Mitigation Measures CUL-2) shall be avoided by project-related construction activities, where feasible. A barrier (temporary fencing) and flagging should be placed between the work location and any resources within 50 feet of a work location to minimize the potential for inadvertent impacts.</p> <p>CUL-4 Phase II Site Evaluation</p> <p>If the results of the XPI (Mitigation Measures CUL-2) indicate the presence of archaeological resources that cannot be avoided by the project (Mitigation Measure CUL-3), then the qualified archaeologist will conduct a Phase II investigation to determine if intact deposits remain and if they may be eligible for listing under the CRHR and/or NRHP or qualify as unique archaeological resources. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s) regarding the Phase II work. If applicable, a Native American monitor shall be present during the Phase II investigation in accordance with Mitigation Measure TCR-4.</p> | <p>Less than significant</p> |

| Impact | Mitigation Measure (s) | Residual Impact |
|--------|--|-----------------|
| | <p>A Phase II evaluation shall occur in conformance with the Caltrans Standard Environmental Reference and per the Local Assistance Program Guidelines. The Evaluation shall include any necessary archival research to identify significant historical associations and mapping of surface artifacts, collection of functionally or temporally diagnostic tools and debris, and excavation of a sample of the cultural deposit. The sample excavation will characterize the nature of the sites, define the artifact and feature contents, determine horizontal and vertical boundaries, and retrieve representative samples of artifacts and other remains.</p> <p>If the archeologist and, if applicable, a Native American monitor (see Mitigation Measure TCR-4) or other interested tribal representative determine it is appropriate, cultural materials collected from the site shall be processed and analyzed in a laboratory according to standard archaeological procedures. The age of the materials shall be determined using radiocarbon dating and/or other appropriate procedures; lithic artifacts, faunal remains, and other cultural materials shall be identified and analyzed according to current professional standards. The significance of the sites shall be evaluated according to the criteria of the CRHR and NHRP. The results of the investigations shall be presented in a technical report following the standards of the California Office of Historic Preservation publication "Archaeological Resource Management Reports: Recommended Content and Format (1990 or latest edition)." If determined necessary, recommendations in the Phase II report shall be implemented for all ground disturbance activities.</p> <p>CUL-5 Phase III Data Recovery</p> <p>Should the results of the Phase II site evaluation (Mitigation Measure CUL-4) yield resources that meet CRHR/ NRHP significance standards and if the resource cannot be avoided by project construction in accordance with Mitigation Measure CUL-4, the Sonoma County DTPW shall ensure that all feasible recommendations (as defined in CEQA Guidelines Section 15364) for mitigation of archaeological impacts are incorporated into the final design prior to construction. Any necessary Phase III data recovery excavation, conducted to exhaust the data potential of significant archaeological sites, shall be carried out by a qualified archaeologist meeting the SOI standards for archaeology according to a research design approved by the County and Caltrans Local Assistance prepared in advance of fieldwork and using appropriate archaeological field and laboratory methods consistent with the California Office of Historic Preservation Planning Bulletin 5 (1991), Guidelines for Archaeological Research Design, or the latest edition thereof. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s) and any Phase III work plans may be combined with a tribal cultural resources plan prepared under Mitigation Measure TCR-3. If applicable, a Native American monitor shall be present in accordance with Mitigation Measure TCR-4.</p> <p>As applicable, the final Phase III Data Recovery reports shall be submitted to Sonoma County prior to starting project construction. Recommendations contained therein shall be implemented throughout all ground disturbance activities.</p> | |

| Impact | Mitigation Measure (s) | Residual Impact |
|--------|------------------------|-----------------|
|--------|------------------------|-----------------|

CUL-6 Cultural Resources Monitoring

If recommended by XPI, Phase II, or Phase III studies (Mitigation Measures **CUL-2**, **CUL-3**, **CUL-4**, and/or **CUL-5**), the project applicant shall retain a qualified archaeologist to monitor project-related, ground-disturbing activities. If archaeological resources are encountered during ground-disturbing activities, Mitigation Measures **CUL-2 through CUL-5** shall be implemented, as appropriate. The archaeological monitor shall coordinate with any Native American monitor as required by Mitigation Measure **TCR-4**.

CUL-7 Unanticipated Discovery of Archaeological Resources

If archaeological resources are encountered during ground-disturbing activities, work within 50 feet shall be halted and the project applicant shall retain an archaeologist meeting the SOI's PQS for archaeology (National Park Service 1983) immediately to evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for CRHR and NRHP eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. If the resource is of Native American origin, implementation of Mitigation Measures **TCR-1 through TCR-4** may be required. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the County and Caltrans Local Assistance for review and approval. If determined necessary, recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.

Sonoma County
Bohemian Highway Bridge over the Russian River Replacement Project

| Impact | Mitigation Measure (s) | Residual Impact |
|--|------------------------|-----------------------|
| <p>Impact CUL-3. The discovery of human remains is always a possibility during ground-disturbing activities. Ground disturbance by the project may disturb or damage unknown human remains.</p> | None required | Less than significant |
| Energy | | |
| <p>Impact E-1. The Project would not result in a significant environmental impact due to the wasteful, inefficient, or unnecessary consumption of energy resources.</p> | None required | Less than significant |
| <p>Impact E-2. The Project would not conflict with or obstruct an applicable renewable energy or energy efficiency plan.</p> | None required | Less than significant |
| Geology and Soils | | |
| <p>Impact GEO-1. The Project Site is not located in an Alquist-Priolo</p> | None required | No impact |

| Impact | Mitigation Measure (s) | Residual Impact |
|--|---|-----------------------|
| <p>Earthquake Fault Zone, and therefore the Project would not directly or indirectly cause substantial adverse effects involving rupture of a known earthquake fault.</p> | | |
| <p>Impact GEO-2. The Project could result in exposure of people or structures to a risk of loss, injury, or death from seismic events. The Project could be located on a geologic unit or soil that is unstable or could become unstable resulting in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. This impact would be less than significant with compliance with applicable laws and regulations.</p> | None required | Less than significant |
| <p>Impact GEO-3. The Project would include ground disturbance such as excavation and grading that would result in loose or exposed soil. This disturbed soil could be eroded by wind or during a storm event, which would result in the loss of topsoil. Adherence to permit requirements and County regulations would ensure this impact is less than significant</p> | None required | Less than significant |
| <p>Impact GEO-4. The Project may result in the construction of structures on expansive soils, which could create a substantial risk to life or property. This impact would be less than significant with compliance with the requirements of the California Building Code.</p> | None require | Less than significant |
| <p>Impact GEO-5. The Project would not include the installation of septic tanks or alternative wastewater disposal systems on soils incapable of supporting such systems.</p> | None required | No impact |
| <p>Impact GEO-6. The Project may directly or indirectly destroy a unique paleontological resource or site or unique geologic feature during ground-disturbing activities.</p> | <p>Mitigation Measures GEO-1 through GEO-6, as applicable, shall be implemented for ground disturbing activities within the Project site underlain by geologic units with high paleontological resource potential and are determined to be within intact native sediments. Implementation of Mitigation Measures GEO-1 through GEO-6 would not be required for Potential Sites underlain by geologic units with low paleontological resource potential (i.e., Quaternary young alluvium [Q, Qal, Qhty, Qhc, River, and Qha] or no paleontological potential (i.e., Franciscan Complex Sandstone [Tkfs]). Mitigation Measures GEO-1 through GEO-6 would not be required in areas determined to have been previously disturbed.</p> | Less than significant |

GEO-1 Paleontological Review of Project Plans

For projects with proposed ground-disturbing activity, the project applicant shall retain a Qualified Professional Paleontologist to review proposed ground disturbance associated with development to:

1. Assess if the project will require paleontological monitoring;
2. If monitoring is required, to develop a project-specific Paleontological Resource Mitigation and Monitoring Program (PRMMP) as outlined in Mitigation Measure GEO-2;
3. Draft the Paleontological Worker Environmental Awareness Program as outlined in Mitigation Measure GEO-3; and
4. Define within a project specific PRMMP under what specific ground disturbing activity paleontological monitoring will be required and the procedures for collection and curation of recovered fossils, as described in Mitigation Measures GEO-4, GEO-5, and GEO-6.

The Qualified Paleontologist shall base the assessment of monitoring requirements on the location and depth of ground disturbing activity in the context of the paleontological potential and potential impacts outlined in this section. A qualified professional paleontologist is defined by the SVP standards as an individual preferably with an M.S. or Ph.D. in paleontology or geology who is experienced with paleontological procedures and techniques, who is knowledgeable in the geology of California, and who has worked as a paleontological mitigation project supervisor for a least two years (SVP 2010). The County shall review and approve the assessment before grading permits are issued.

GEO-2 Paleontological Resources Mitigation and Monitoring Program

For those projects deemed to require a PRMMP under Mitigation Measure GEO-1 above, the Qualified Paleontologist shall prepare a PRMMP for submission to the County prior to the issuance of grading permits. The PRMMP shall include a pre-construction paleontological site assessment and develop procedures and protocol for paleontological monitoring and recordation. Monitoring shall be conducted by a qualified paleontological monitor who meets the minimum qualifications per standards set forth by the SVP.

The PRMMP procedures and protocols for paleontological monitoring and recordation shall include:

5. Location and type of ground disturbance requiring paleontological monitoring.
6. Timing and duration of paleontological monitoring.
7. Procedures for work stoppage and fossil collection.

| Impact | Mitigation Measure (s) | Residual Impact |
|--------|--|-----------------|
| | <ol style="list-style-type: none"> 8. The type and extent of data that should be collected with recovered fossils. 9. Identify an appropriate curatorial institution. 10. Identify the minimum qualifications for qualified paleontologists and paleontological monitors. 11. Identify the conditions under which modifications to the monitoring schedule can be implemented. 12. Details to be included in the final monitoring report. | |
| | <p>Prior to starting construction, copies of the PRMMP shall be submitted to the County for review and approval as to adequacy.</p> | |
| | <p><i>GEO-3 Paleontological Worker Environmental Awareness Program (WEAP)</i></p> | |
| | <p>Prior to any ground disturbance within Potential Sites underlain by geologic units with high paleontological resource potential, the applicant shall incorporate information on paleontological resources into the Project’s Worker Environmental Awareness Training (WEAP) materials, or a stand-alone Paleontological Resources WEAP shall be submitted to the County for review and approval. The Qualified Paleontologist or his or her designee shall conduct training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff. The Paleontological WEAP training shall be fulfilled simultaneously with the overall WEAP training, or at the first preconstruction meeting at which a Qualified Paleontologist attends prior to ground disturbance. Printed literature (handouts) shall accompany the initial training. Following the initial WEAP training, all new workers and contractors must be trained prior to conducting ground disturbance work. A sign-in sheet for workers who have completed the training shall be submitted to the County upon completion of WEAP administration.</p> | |
| | <p><i>GEO-4 Paleontological Monitoring</i></p> | |
| | <p>Paleontological monitoring shall only be required for those ground-disturbing activities identified under Mitigation Measure GEO-1, where construction activities (i.e., grading, trenching, foundation work) are proposed in previously undisturbed (i.e., intact) sediments with high paleontological sensitivities. Monitoring shall be conducted by a qualified professional paleontologist (as defined above) or by a qualified paleontological monitor (as defined below) under the supervision of the qualified professional paleontologist. Monitoring may be discontinued on the recommendation of the qualified professional paleontologist if they determine that sediments are likely too young, or conditions are such</p> | |

| Impact | Mitigation Measure (s) | Residual Impact |
|--------|---|-----------------|
| | <p>that fossil preservation would have been unlikely, or that fossils present have little potential scientific value.</p> | |
| | <p>The following outlines minimum monitor qualifications and procedures for fossil discovery and treatment:</p> | |
| | <ol style="list-style-type: none"> <li data-bbox="626 409 1187 898">13. Monitoring. Paleontological monitoring shall be conducted by a qualified paleontological monitor, who is defined as an individual who has experience with collection and salvage of paleontological resources and meets the minimum standards of the SVP (2010) for a Paleontological Resources Monitor. The Qualified Paleontologist will determine the duration and timing of the monitoring based on the location and extent of proposed ground disturbance. If the Qualified Paleontologist determines that full-time monitoring is no longer warranted, based on the specific geologic conditions at the surface or at depth, they may recommend that monitoring be reduced to periodic spot-checking or cease entirely. Refer to Table 4.7-1 for a paleontological resource potential summary and recommendations for the Project Sites. <li data-bbox="626 913 1175 1314">14. Fossil Discoveries. In the event of a fossil discovery by the paleontological monitor or construction personnel, all work in the immediate vicinity of the find shall cease. A Qualified Paleontologist shall evaluate the find before restarting construction activity in the area. If the Qualified Paleontologist determines that the fossil(s) is (are) scientifically significant; including identifiable specimens of vertebrate fossils, uncommon invertebrate, plant, and trace fossils; the Qualified Paleontologist (or paleontological monitor) shall recover them following standard field procedures for collecting paleontological as outlined in the PRMMP prepared for the project. <li data-bbox="626 1329 1195 1671">15. Salvage of Fossils. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. In this case the Qualified Paleontologist shall have the authority to temporarily direct, divert or halt construction activity to ensure that the fossil(s) can be removed in a safe and timely manner. If fossils are discovered, the Qualified Paleontologist (or Paleontological Monitor) shall recover them as specified in the project's PRMMP. | |
| | <p><i>GEO-5 Preparation and Curation of Recovered Fossils</i></p> | |
| | <p>Once salvaged, significant fossils shall be identified to the lowest possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection (such as the</p> | |

| Impact | Mitigation Measure (s) | Residual Impact |
|--|--|-----------------------|
| | <p>University of California Museum of Paleontology), along with all pertinent field notes, photos, data, and maps. Fossils of undetermined significance at the time of collection may also warrant curation at the discretion of the Qualified Paleontologist.</p> <p>GEO-6 Final Paleontological Mitigation Report</p> <p>Upon completion of ground disturbing activity (and curation of fossils if necessary) the Qualified Paleontologist shall prepare a final mitigation and monitoring report outlining the results of the mitigation and monitoring program. The report should include discussion of the location, duration and methods of the monitoring, stratigraphic sections, any recovered fossils, and the scientific significance of those fossils, and where fossils were curated. The report shall be submitted to the County prior to occupancy permits. If the monitoring efforts produced fossils, then a copy of the report shall also be submitted to the designated museum repository.</p> | |
| Greenhouse Gas Emissions | | |
| <p>Impact GHG-1. Project generated GHG emissions would be primarily from construction activities AND TEMPORARY in nature.</p> | None required | Less than significant |
| <p>Impact GHG-2. The Project is not in conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing greenhouse gases.</p> | None required | Less than significant |
| Hazards and Hazardous Materials | | |
| <p>Impact HAZ-1. The Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, nor through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.</p> | None required | Less than significant |
| <p>Impact HAZ-2. The Project could result in development on sites contaminated with hazardous materials. However, compliance with applicable regulations relating to site remediation would minimize impacts from development on contaminated sites.</p> | <p>HAZ-1- Conduct Phase II Site Assessment Prior to Construction</p> <p>The Project ISA determined that for areas identified as high or medium risk for REC's, potential REC's, and environmental areas of concern, a Phase II screening of the subsurface soils or groundwater will be completed within the identified Project boundaries. The Phase II screening will investigate the Project area where construction is anticipated to disturb the subsurface soil, encounter groundwater, or disturb or remove existing structures. Should</p> | Less than significant |

| Impact | Mitigation Measure (s) | Residual Impact |
|--------|---|-----------------|
| | <p>the preliminary screening indicate the presence of soil or groundwater contamination within the Project area, a Phase II assessment will be conducted to investigate the depth and lateral extent of contamination within the Project area.</p> <p>The Phase II assessment will include sampling and laboratory analysis to confirm the presence or absence of hazardous materials and may include the following:</p> <ul style="list-style-type: none"> • Surficial soil and water samples • Testing of underground storage tanks • Subsurface soil borings • Groundwater monitoring well installation, sampling, and analysis (may be appropriate on neighboring properties as well to determine the presence of contamination) <p>The County shall ensure proper implementation the recommendations with the Project ISA by incorporating the following task as part of the Project design and construction specifications. These tasks will be completed prior to construction activities and include the following measures:</p> <ul style="list-style-type: none"> • It is highly likely that the surface soils along the Project area are affected by ADL. Therefore, it is recommended that surface samples of soil be collected and analyzed for total lead. • Four concrete occurrences were identified within the Project site that have potential for ACM and should be analyzed if they are to be disturbed or interfered with. This work should be performed by an inspector certified by AHERA under TSCA Title II and certified by Cal OSHA under State of California rules and regulations (California Code of Regulations, Section 1529). • Lead based paint and ACM should be abated by using a contractor certified to perform such work. Further ACM testing should be performed during the design phase. • On-site dumping and burning of household items was identified under the southern section of the current bridge and Dutch Bill Creek Bridge directly next to the southern part of the site. This material contains potentially hazardous material and should be disposed of by appropriately qualified personnel and soils tested. • Site address 9908 Main St (APN 095-160-006) located underneath the southern section of the proposed bridge appears to have stored vehicles | |

| Impact | Mitigation Measure (s) | Residual Impact |
|--|--|------------------------------|
| | <p>in various states of repair for some time. Petroleum products from these vehicles could represent a potential REC and testing of these soils should be undertaken by suitably licensed personnel to determine the type and concentration of any hazardous substances.</p> <ul style="list-style-type: none"> • Site address 9906 Main St (APN 095-160-005) possibly contained a LUST. Two USTs were removed from the site in 1986 without permitting and environmental samples to determine the presence and/or extent of soil and groundwater contamination. It is recommended that an environmental investigation be undertaken to determine the presence and/or extent of soil and groundwater contamination at the site if soil is to be disturbed and/or if ownership is to be transferred as part of the Project process. • Part of the Project site was occupied by historic railroads and located hydraulically up-gradient (groundwater) from the Project. Potential toxic substances from the historic railways and engines could include heavy metals, creosote, and polycyclic aromatic hydrocarbons (PAHs). Suitable testing methods should be employed to determine the existence and concentrations of toxic substances. <p>HAZ-2- Develop and Implement Plans to Address Worker Health and Safety</p> <p>If results of the Phase II testing results in positive identification of REC's, The County DTPW or construction contractor will develop and implement the necessary plans and measures required by Caltrans and federal and state regulations, including a health and safety plan, BMPs, and an injury and illness prevention plan. The plans will be prepared and implemented to address worker safety when working with potentially hazardous materials, including LBP, ACM, ADL, UST/ LUST sites and other materials within the right-of-way during any construction activity.</p> | |
| <p>Impact HAZ-3. The Project Site is not located within two miles of an airport. The project would not result in a safety hazard or excessive noise for people residing or working in or near the Project Site.</p> | <p>None required</p> | <p>No impact</p> |
| <p>Impact HAZ-4. The Project would not result in any physical changes that could interfere with or impair emergency response or evacuation. Therefore, the project would not</p> | <p>None required</p> | <p>Less than significant</p> |

Sonoma County
 Bohemian Highway Bridge over the Russian River Replacement Project

| Impact | Mitigation Measure (s) | Residual Impact |
|---|---|-----------------------|
| result in interference with these types of adopted plans. | | |
| Impact HAZ-5. The Project would not expose people or structures to risk of loss, injury, or death. | None required | No impact |
| Hydrology and Water Quality | | |
| Impact HWQ-1. the Project would not violate water quality standards or Waste Discharge Requirements, or otherwise substantially degrade surface or groundwater quality | Refer to BIO-1 (General Conditions), BIO-2 (Erosion and Sediment Control), BIO-3 (Accidental Spill and Pollution Prevention), BIO-4 (Riparian Habitat Replacement), and BIO-11 (Waters of the US/ Waters of the State) | Less than significant |
| Impact HWQ-2. The Project would not interfere substantially with groundwater recharge or decrease groundwater supplies such that the Project may impede sustainable groundwater management of local groundwater basins. | None required | Less than significant |
| Impact HWQ-3. The Project would alter drainage patterns and increase runoff at the Project Site, but would not result in substantial erosion or siltation on or off site, result in increased flooding on or off site, exceed the capacity of existing or planned stormwater drainage systems, or generate substantial additional polluted runoff. | None required | Less than significant |
| Impact HWQ-4. The Project would alter drainage patterns on and May increase runoff from the Project Site. The Project is within an area at risk from inundation by flood hazard; required compliance with applicable General Plan goals and policies ensures Impacts would be less than significant | None required | Less than significant |
| Impact HWQ-5. The Project site is within a flood hazard zone, but not within an area at risk from inundation by seiche or tsunami. The Project would not be at risk of release of pollutants due to Project inundation | None required | Less than significant |
| Impact HWQ-6. The Project would comply with adopted water quality control plans and sustainable groundwater management plans applicable to the Site. | Refer to BIO-1 (General Conditions), BIO-2 (Erosion and Sediment Control), BIO-3 (Accidental Spill and Pollution Prevention), BIO-4 (Riparian Habitat Replacement), and BIO-11 (Waters of the US/ Waters of the State) | Less than significant |
| Land Use and Planning | | |

| Impact | Mitigation Measure (s) | Residual Impact |
|---|------------------------|-----------------------|
| Impact LU-1. Project implementation would not physically divide an established community. | None required | Less than significant |
| Impact LU-2. The Project would not result in a significant environmental impact due to a conflict with any land use plan, policy, or regulation. | None required | Less than significant |
| Mineral Resources | | |
| Impact MIN-1. Although mineral extraction sites occur throughout the county, none occurs at the Project site. | None required | No impact |

Sonoma County
 Bohemian Highway Bridge over the Russian River Replacement Project

| Impact | Mitigation Measure (s) | Residual Impact |
|---|--|------------------------------|
| Noise | | |
| <p>Impact NOI-1. Temporary construction activities associated with the Project could result in noise level increases that would exceed applicable construction noise standards at nearby noise sensitive receivers. This would be a potentially significant impact and mitigation is required. Operational noise impacts from the project would not exceed County standards.</p> | <p>NOI-1 General Construction Activities Noise Reduction Measures</p> <p>Night work will be considered on an as needed basis, and only occur with prior County approvals. If construction activities occur between the hours of 10 p.m. to 7 a.m., within 0.5 mile of a noise-sensitive receiver (residences, schools, day care facilities, hospitals, nursing homes, long term medical or mental care facilities, places of worship, libraries and museums, transient lodging, and office building interiors), the following measures shall be implemented:</p> <ol style="list-style-type: none"> 1. Nighttime construction noise shall not exceed the noise level standards shown in Table 4.13-4 when conducted between the hours of 10 p.m. to 7 a.m. 2. The Project applicant shall retain a qualified consultant to prepare a project-specific construction noise impact analysis. The results shall be submitted to Sonoma County for review and approval prior to the onset of any night construction work. 3. The analysis of nighttime construction activities shall be completed in accordance with the County's Guidelines for the Preparation of Noise Analysis. The analysis shall consider the type of construction equipment to be used and the potential noise levels at noise-sensitive receivers located within 0.5 mile of the Potential Site. 4. Provided the nighttime construction noise analysis determines that nighttime noise levels will not exceed 45 dBA L₅₀, 50 dBA L₂₅, 55 dBA L₀₈, or 60 dBA L₀₂ between the hours of 10 p.m. to 7 a.m., construction may proceed without additional measures. 5. Provided the nighttime construction noise analysis determines that nighttime noise levels would exceed the nighttime standards shown in Table 4.13-4, additional measures shall be implemented to reduce noise levels below the standard. These measures may include, but not be limited to, use of temporary noise barriers or performing activities at a further distance from the noise-sensitive land use. | <p>Less than significant</p> |
| <p>Impact NOI-2. Construction vibration levels would not Exceed levels that are commonly applied for human annoyance or structure damage.</p> | <p>None required</p> | <p>Less than significant</p> |
| <p>Impact NOI-3. The Project is not located within two miles of an airstrip or airport or within the noise contours for an airstrip or airport, and no impacts would occur from</p> | <p>None required</p> | <p>No impact</p> |

| Impact | Mitigation Measure (s) | Residual Impact |
|--|--|------------------------------|
| <p>exposing residents or workers to excessive aircraft noise levels.</p> | | |
| <p>Population and Housing</p> | | |
| <p>Impact PH-1. The Project will replace the existing bridge over the Russian River. No new housing would be facilitated by the Project that is not facilitated by the current bridge. Replacement of the bridge will not increase the roadway capacity of the bohemian highway.</p> | <p>None required</p> | <p>No impact</p> |
| <p>Impact PH-2. The Project would not displace existing housing or people. Therefore the construction of replacement housing elsewhere will not be necessary.</p> | <p>None required</p> | <p>No impact</p> |
| <p>Public Services and Recreation</p> | | |
| <p>Impact PS-1. The Project would not result in substantial adverse physical impacts associated with the construction of new or physically altered fire facilities to maintain acceptable service ratio response times or other objectives.</p> | <p>None required</p> | <p>Less than significant</p> |
| <p>Impact PS-2. The Project would not result in substantial adverse physical impacts associated with the construction of new or physically altered police facilities to maintain acceptable service ratio response times or other objectives.</p> | <p>None required</p> | <p>No impact</p> |
| <p>Impact PS-3. The Project would not result in substantial adverse physical impacts associated with the construction of new or physically altered school facilities.</p> | <p>None required</p> | <p>Less than significant</p> |
| <p>Impact PS-4. Impacts to recreational facilities and functions adjacent to and near the Project site that would impact service and other performance objectives would either be temporary during construction, or result in beneficial permanent impacts. No new parks would be created, or required as a result of Project construction.</p> | <p>None required</p> | <p>Less than significant</p> |
| <p>Impact PS-5. The Project would result in permanent and temporary impacts to public parking facilities.</p> | <p>Mitigation Measure PS-1 Permanent Improvements to MRRPD River, Beach, Parking, and Future Facilities. In addition to a replacement bridge over MRRPD beach and river areas that would meet current seismic safety standards, reducing the safety risk to beach users, the Project includes a number of</p> | <p>Less than significant</p> |

| Impact | Mitigation Measure (s) | Residual Impact |
|--------|---|-----------------|
| | <p>features that permanently improve MRRPD facilities, including:</p> <ul style="list-style-type: none"> • Replacement bridge will provide improved vehicular, pedestrian and cyclist access to MRRPD sites, including replacement with roadways and sidewalks that meet current American with Disabilities (ADA) design standards • In addition to wider roadways and sidewalks that are ADA compliant, the proposed replacement bridge is designed to include Class I and Class II bike lanes. These bike lanes will provide improved access for cyclists to MRRPD beaches and other properties, and well as an improved riding experience for cyclists in the general vicinity • The removal of the existing bridge and its piers will open up the low-flow river channel, improving conditions for flood hydraulics, water recreation, and fisheries habitat. The soil around the existing piers has washed away, creating deep scour pools that can present a safety hazard to water users, as well as to the overall bridge structure. The replacement bridge was designed to clear-span the low-flow river channel, improving water recreational opportunities and fisheries habitat. • Similar to existing bridge pier removal, removal of the remnants of a pre-1934 pier footing from the river channel as a part of the Project would eliminate a potential safety hazard, and improve recreational water use conditions and aquatic habitat for salmonids. • The replacement bridge was designed with significant input from the community to be an attractive asset that would enhance the community's unique character and serve as a focal point for the community and an attractive destination for visitors. During the course of three community meetings and a web-based survey, the County solicited input from the community on bridge type, design, themes, and architectural amenities, resulting in the selection of the steel-tied arch with view overlooks on each side of the bridge. • Resurfacing of the currently unimproved path from Main Street to Dutch Bill Creek, and potential replacement of the existing bollards midway down the access, in coordination with MRRPD. The improvements would allow for better emergency vehicle access to Dutch Bill Creek and reduce erosion and sedimentation. The County would coordinate with MRRPD to | |

| Impact | Mitigation Measure (s) | Residual Impact |
|--------|---|-----------------|
| | <p>determine if resurfacing and replacing the bollards along the path is desired and develop a mutually agreed upon plan for MRRPD’s review and approval.</p> <ul style="list-style-type: none"> • Following construction, the Monte Rio Fishing Access parking area would be reconfigured, repaved and restriped in coordination with MRRPD and CDFW. In addition, improvements to the Monte Rio Fishing Access parking area drainage system may be incorporated into the Project as part of the Project’s Low-impact Development (LID) water treatment plans, as feasible. • Temporary Parking during Construction: To mitigate for temporary parking reductions during construction at the Monte Rio Fishing Access parking areas, the County will develop a temporary parking plan that would provide 100% of the existing parking for the duration of construction activities. This temporary parking plan will be subject to review and approval by MRRPD. For temporary reductions in parking at Big Rocky Beach, the County will delineate parking stalls to increase parking capacity. Proposed methods of delineating parking stalls may include concrete wheel stops, signage, concrete markers, fabric strips affixed to the ground or other methods to be mutually agreed upon and subject to review and approval by MRRPD. • Implementation of Safety Protection Measures for Recreational Beach and Water Users: To minimize and avoid harm to recreational beach and water users, a buffer area around construction, access and staging areas will be restricted from public use as “publically prohibited areas”. Publically prohibited areas will be delineated with signage, fenced, or otherwise marked to limit access and protect the public from construction activities. In addition to a “publically prohibited area” buffer, the bypass culverts would also be fenced (or screened with trash racks) at their inlet and outlets to prevent people from entering. • Traffic Control during Construction: During all periods of construction, access across the river between the north and south areas of Monte Rio will remain open. Although traffic may be diverted through lane closures and re-routing, a traffic control plan, including notification prior to and during construction will be implemented. • Construction Noise Minimization Avoidance and Minimization: Short-term construction activities would require motorized construction equipment that would result in potential noise impacts to MRRPD beach and water users. Noise avoidance, minimization and mitigation measures include conformance to Section 14-8.02, “Noise Control,” of the Caltrans Standard Specifications. Other minimization measures include: | |

| Impact | Mitigation Measure (s) | Residual Impact |
|---|---|---|
| <p>Impact PS-6. The Project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.</p> <p>Impact PS-7. The Project will temporarily and permanently impact existing recreational facilities. Existing parking facilities will be altered as a result of the Project.</p> | <ul style="list-style-type: none"> • Use of a muffler for internal combustion engines • Construction activities, excluding activities required to occur without interruption or activities that would pose a significant safety risk to workers or citizens, or in the event of an emergency, shall be limited to between the daytime hours of 7:00 a.m. and 7:00 p.m. No work would be allowed on holidays. Weekend work may be allowed, on a limited basis, with prior approval from the Department of Transportation and Public Works, during the hours of 9:00 a.m. and 5:00 p.m. • Portable/stationary equipment (e.g., generators, compressors) and equipment staging areas will be located at the furthest distance from the nearest residential dwelling, and, where feasible, from the beach areas. • As directed by the County resident engineer, the contractor shall implement appropriate additional noise abatement measures including, but not limited to, the installation of temporary noise barriers, turning off idling equipment after no more than five minutes of inactivity, and rescheduling construction activity to avoid noise-sensitive days or times. <p>Refer to Mitigation Measure PS-1</p> | <p>Less than significant</p> <p>Less than significant</p> |
| Transportation and Traffic | | |
| <p>Impact TRA-1. The Project would not conflict with programs, plans, ordinances, or policies addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, and would not conflict or be inconsistent with CEQA Guidelines section 15064.3.</p> | <p>TRANS-1- Notification of Closure</p> <p>The County shall notify property owners along Geysers Road at least 7 days in advance of the proposed temporary closure. Signage shall be placed at both ends of Geysers road notifying motorists of the planned closure. A working jobsite telephone number must be available and provided to Emergency Services during any bridge or approach roadway closures so they may call ahead to request re-opening. Any bridge or approach roadway closures must be re-opened within 10 minutes for emergency vehicles, or within 30 minutes for non-emergency vehicles.</p> | <p>Less than significant</p> |

| Impact | Mitigation Measure (s) | Residual Impact |
|--|--|------------------------------|
| <p>Impact TRA-2. The proposed Project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).</p> | <p>None required</p> | <p>Less than significant</p> |
| <p>Impact TRA-3. The proposed Project would not result in inadequate emergency access.</p> | <p>Mitigation Measure TRANS-2 - Emergency Access Emergency response organizations will be notified of the Project construction schedule and any temporary closure in advance. The County will require the contractor to provide passage of emergency vehicles through the Project site at all times. The Contractor shall make plans for emergency vehicle staging on the easterly approach if complete closure is determined necessary at any point in the construction schedule.</p> | <p>Less than significant</p> |

| Impact | Mitigation Measure (s) | Residual Impact |
|--|---|------------------------------|
| Tribal Cultural Resources | | |
| <p>Impact TCR-1. The Project has the potential to impact tribal cultural resources.</p> | <p>TCR-1 Tribal Cultural Resources Coordination and Consultation</p> <p>Archival research has identified the site to be sensitive with regard to possible presence of unknown TCR. Throughout the implementation of Mitigation Measures CUL-2 through CUL-7, the qualified archaeologist retained to implement the measures shall confer with local California Native American tribe(s) on the identification and treatment of tribal cultural resources and/or resources of Native American origin not yet determined to be tribal cultural resources through AB 52 consultation. If, during the implementation of Mitigation Measures CUL-2 through CUL-7, a resource of Native American origin is identified, the County shall be notified immediately in order to open consultation with the appropriate local California Native American tribe(s) to discuss whether the resource meets the definition of a tribal cultural resource as defined in AB 52.</p> <p>TCR-2 Avoidance of Tribal Cultural Resources</p> <p>When feasible, the Project shall be designed to avoid known tribal cultural resources. The feasibility of avoidance of tribal cultural resources shall be determined by the County, FHWA, and in consultation with local California Native American tribe(s).</p> <p>TCR-3 Tribal Cultural Resource Plan</p> <p>A Tribal Cultural Resources Plan shall be required for work in areas identified as high to moderate sensitivity for tribal cultural resources during consultation with local Native American tribes during the implementation of TCR-1 and/or by the qualified archaeologist during the implementation of CUL-2 through CUL-7. Prior to starting construction, the County or its consultant, shall prepare a tribal cultural resources treatment plan to be implemented in the event an unanticipated archaeological resource that may be considered a tribal cultural resource is identified during construction. The plan shall include any necessary monitoring requirements, suspension of all earth-disturbing work in the vicinity of the find, avoidance of the resource or, if avoidance of the resource is infeasible, the plan shall outline the appropriate treatment of the resource in coordination with local Native American tribes and, if applicable, a qualified archaeologist. Examples of appropriate treatment for tribal cultural resources include, but are not limited to, protecting the cultural character and integrity of the resource, protecting traditional use of the resource, protecting the confidentiality of the resource, or heritage recovery. As appropriate, the tribal cultural resources treatment plan may be combined with any Extended Phase I, Phase II, and/or Phase III work plans or archaeological monitoring plans prepared for work carried out during the implementation of Mitigation Measures CUL-4, CUL-6, CUL-7, or CUL-8. The plan shall be reviewed and approved by the County and the appropriate local California Native American tribe(s) to confirm compliance with these measures prior to construction.</p> | <p>Less than significant</p> |

| Impact | Mitigation Measure (s) | Residual Impact |
|--------|--|-----------------|
| | <p>TCR-4 Native American Monitoring</p> <p>For work in areas identified as high to moderate sensitivity for tribal cultural resources, consultation with local California Native American tribe(s) during the implementation of TCR-1 and/or areas identified as sensitive for cultural resources of Native American origin by the qualified archaeologist during the implementation of CUL-2 through CUL-7, Sonoma County DTPW, in conjunction with interested tribes, shall retain Native American monitor(s) representing tribes that are traditionally and culturally affiliated with the geographic area of the project site to observe ground disturbance, including archaeological excavation, associated with the Project. Monitoring methods and requirements shall be outlined in a tribal cultural resources treatment plan prepared under Mitigation Measure TCR-3. In the event of a discovery of tribal cultural resources, the steps identified in the tribal cultural resources plan prepared under Mitigation Measure TCR-3 shall be implemented.</p> | |

| Utilities | | |
|---|---------------|-----------------------|
| <p>Impact UTIL-1. Impacts related to utilities and utility services, including new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities would be less than significant. The Project only requires minimal water supplies for maintenance and cleaning, sufficient supplies are available at the site.</p> | None required | Less than significant |
| <p>Impact UTIL-2. The Project will not require wastewater service.</p> | None required | No impact |
| <p>Impact UTIL-3. The Project will not generate solid waste in excess of State or local standards, or that would otherwise overwhelm the capacity of local infrastructure or impair the attainment of solid waste reduction goals.</p> | None required | Less than significant |
| <p>Impact UTIL-4. The Project will not generate solid waste in excess of State or local standards, or that would otherwise overwhelm the capacity of local infrastructure or impair the attainment of solid waste reduction goals.</p> | None required | Less than significant |
| <p>Impact UTIL-5. The Project will not generate solid waste in excess of State or local standards, or that would otherwise overwhelm the capacity of local infrastructure or impair the attainment of solid waste reduction goals.</p> | None required | No impact |

Sonoma County
Bohemian Highway Bridge over the Russian River Replacement Project

| Impact | Mitigation Measure (s) | Residual Impact |
|--|---|------------------------------|
| Wildfire | | |
| <p>Impact WFR-1. The Project is within a SRA or Very High FHSZs, but the Project would not substantially impair an adopted emergency response or evacuation plan.</p> | <p>None required</p> | <p>Less than significant</p> |
| <p>Impact WFR-2. The Project Site is in or near Moderate, High, and Very High FHSZs. the Project would not expose Project occupants and structures to wildfire risks for sites located in or near (within 2 miles of) SRAs or Very High FHSZs</p> | <p>Refer to BIO-1 (General Mitigation Measures); BIO-2 (Erosion and Sediment Control); BIO-3 (Accidental Spill and Pollution Prevention); BIO-4 (Riparian Habitat Replacement); BIO-5 (Special-status Plant Mitigation) and BIO-6 (Prevention of Invasive Species Spread)</p> | <p>Less than significant</p> |

This page intentionally left blank

Introduction Table of Contents

| | | |
|-----|---|------|
| 4 | Introduction | 1-1 |
| 4.1 | Statement of Purpose | 1-1 |
| 4.2 | EIR Content and Format..... | 1-2 |
| 4.3 | Existing Conditions and Baseline..... | 1-2 |
| 4.4 | Public Review and Participation Process | 1-3 |
| 4.5 | Scope and Content..... | 1-10 |
| 4.6 | Lead, Responsible, and Trustee Agencies | 1-11 |
| 4.7 | Environmental Review Process..... | 1-12 |

Tables

| | | |
|-----------|-------------------------------------|-----|
| Table 1-1 | NOP Comments and EIR Response | 1-4 |
|-----------|-------------------------------------|-----|

Figures

| | | |
|------------|-----------------------------------|------|
| Figure 1-1 | Environmental Review Process..... | 1-14 |
|------------|-----------------------------------|------|

1 Introduction

The Sonoma County, Department of Transportation and Public Works (DTPW) proposes to replace the existing Bohemian Highway Bridge (also known as the Monte Rio Bridge) over the Russian River. The existing Bohemian Highway Bridge is located in the community of Monte Rio, California. DTPW will use Highway Bridge Program funds to replace the existing structure to improve roadway safety and comply with the American Association of State Highway and Transportation Officials (AASHTO) design guidelines and Sonoma County Design Standards.

This section discusses (1) the purpose of this EIR; (2) the content and format of the EIR; (3) public review and participation process; (4) the scope and content of the document; (5) lead, responsible and trustee agencies pursuant to California Environmental Quality Act (CEQA); and (6) the environmental review process required under the CEQA. The proposed project is described in detail in Section 2, *Project Description*.

1.1 Statement of Purpose

The Project is being funded by the Federal Highway Bridge Program and therefore requires compliance with both the National Environmental Policy Act and the California Environmental Quality Act (CEQA). The lead agency for NEPA is the California Department of Transportation (Caltrans) as assigned by the Federal Highway Administration. Sonoma County is the CEQA lead agency.

This Draft Environmental Impact Report (EIR) has been prepared according to CEQA (California Public Resources Code § 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) to evaluate the potential environmental impacts associated with implementing the Project. CEQA requires public agencies to consider the potential adverse environmental impacts of projects under their consideration. Adverse environmental impacts include both direct impacts and reasonably foreseeable indirect impacts. A discretionary project that would have a significant adverse impact on the environment cannot be approved without the preparation of an EIR. According to Section 15002 of the State CEQA Guidelines, the basic purposes of CEQA include the following.

- Inform government decision makers and the public about the potential significant environmental effects of proposed activities.
- Identify ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governing agency finds the changes to be feasible.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

The County Board of Supervisors will review the Draft EIR to understand the Project's impacts before taking action. They will also consider other information and testimony that will arise during deliberations on the Project before making their decision.

1.2 EIR Content and Format

This document includes discussions of environmental impacts related to several issue areas. The analysis of environmental impacts identifies impacts by category: significant and unavoidable, significant but mitigable, less than significant, and no impact or beneficial. It proposes mitigation measures, where feasible, for identified significant environmental impacts to reduce project generated impacts. The responsible agency for each mitigation measure is also identified. It is the responsibility of the lead agency implementing specific projects to conduct the necessary environmental review consistent with CEQA and where applicable, incorporate mitigation measures provided herein and developed specifically for the project to minimize environmental impacts and/or reduce impacts to less than significant.

This EIR has been organized into seven sections. These include:

- 1.0 **Introduction.** Provides the project background, description of the type of environmental document and CEQA streamlining opportunities, and information about the EIR content, format, and public review process.
- 2.0 **Project Description.** Presents and discusses the project objectives, project location and specific project characteristics.
- 3.0 **Environmental Setting.** Provides a description of the existing physical setting of the project area and an overview of the progress in project implementation.
- 4.0 **Analysis of Environmental Issues.** Describes existing conditions found in the project area and assesses potential environmental impacts that may be generated by implementing the proposed project, including cumulative development in the region. These potential project impacts are compared to “thresholds of significance” to determine the nature and severity of the direct and indirect impacts. Mitigation measures, intended to reduce adverse, significant impacts below threshold levels, are proposed where feasible. Impacts that cannot be eliminated or mitigated to less than significant levels are also identified.
- 5.0 **Other CEQA Required Discussions.** Identifies growth inducing impacts that may result from implementation of the proposed project, as well as long-term effects of the project and significant irreversible environmental changes.
- 6.0 **Alternatives.** Describes alternatives to the proposed project and compares each alternative’s environmental impacts to the proposed project.
- 7.0 **References/Preparers.** Lists all published materials, federal, state, and local agencies, and other organizations and individuals consulted during the preparation of this EIR. It also lists the EIR preparers.

1.3 Existing Conditions and Baseline

As outlined by *CEQA Guidelines* Section 15125, an EIR must include a description of the physical environmental conditions in the project vicinity. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. The description of the environmental setting shall be no longer than is necessary to provide an understanding of the significant effects of the proposed project and its alternatives. The purpose of this requirement is to give the public and decision makers the most accurate and understandable picture practically possible of the project's likely near-term and long-term impacts. Generally, the

lead agency should describe physical environmental conditions as they exist at the time the Notice of Preparation (NOP) is published. For purposes of this EIR, the baseline was established on March 22, 2021, when the County published the NOP. Physical conditions that may have changed after this day have been included for informational purposes only.

1.4 Public Review and Participation Process

Prior to starting the CEQA process, early coordination and public involvement took place. Community engagement was conducted through workshops at the Monte Rio Recreational Park District Community Center, through web based surveys and virtual Zoom meetings. These meetings allowed for the County Department of Transportation and Public Works (DTPW) to educate the community about the project history, existing bridge condition based on Caltrans Inspection Reports, available funding, feasibility of replacement vs retrofit, etc. The Community helped DTPW understand local priorities such as how the current structure is utilized, favorable alignments locations, design features and aesthetics for a replacement structure.

The County of Sonoma distributed a Notice of Preparation (NOP) of the EIR for a 30-day agency and public review period commencing March 22, 2021 and closing April 21, 2021. In addition, the County held a virtual Scoping Meeting on April 14, 2021. The meeting, held from 6:00 p.m. to 7:00 p.m., was aimed at providing information about the proposed project to members of public agencies, interested stakeholders and residents/community members. Due to the COVID-19 pandemic, the virtual meeting was held through an online meeting platform and a call-in number. The County received letters from 5 agencies, 2 organizations, and 8 people in response to the NOP during the public review period, as well as comments from 10 people during the scoping meeting. Table 1.1 summarizes the content of the scoping comment letters received and verbal comments and where the issues raised are addressed in the Project EIR.

Table 1-1 NOP Comments and EIR Response

| Commenter | Comment/Request | How and Where It Is Addressed |
|---|---|--|
| Agency Comments | | |
| Sweetwater Springs Water District | <p>The commenter has concerns regarding water main relocation. Water main serves 1000 residents. Cost estimate is \$850,000.00. Cost impacts to disadvantages communities, Late notification does not allow for budgeting, EIR should address significant impact to community and environmental justice issues. EIR should address mitigation for water supply system, specifically utility relocation, cost of abandonment of existing water mains, and new connections to new water main.</p> | <p>See Section 4.18, <i>Utilities and Service Systems</i>, for details regarding water and wastewater capacity.</p> <p>Comment noted. The comment does not pertain to the scope of the EIR. It will be considered by the decision makers prior to a decision on the project.</p> <p>Sweetwater springs is a privately owned water district, and they have entered into an agreement with the County for the use of the County’s bridge to carry their facilities. The County is abiding by all terms of the agreement. The costs will be borne by the appropriate parties as indicated by the agreement. The County is coordinating with Sweetwater springs to provide any information they need to plan for the relocation, and the project is being conducted in a manner to insure continued operation of their water system.</p> |
| California Department of Fish and Wildlife (CDFW) | <p>The commenter summarizes CEQA requirements and agency responsibility and includes a list of special-status species known to occur or that have a potential to occur in or near the project area. The commenter recommends surveys for special-status species with potential to occur and botanical surveys during the blooming period for all sensitive plant species with the potential to occur. The commenter summarizes filing fees and regulatory requirements as well.</p> | <p>See Section 4.4, <i>Biological Resources</i>, for details regarding special status species. The details within are in line with and responds to all comments provided.</p> <p>The filing fees and regulatory requirements associated with resource agency permitting will occur after the project EIR is approved by Sonoma County Board of Supervisors.</p> |
| Monte Rio Recreation and Parks District | <p>The commenter summarizes the Districts concerns. This includes parking for Community Center events during 3 years of construction, overflow parking may impact emergency services response times. MRRPD has no life guards, concerned about safety with work pad and culverts during construction. Existing bridge piers to be removed, but abutments left behind- there are safety concerns regarding what is left behind, also hydrological impacts w leaving these in place. How will demo affect construction staging in year 3, how this affects access to Big Rocky Beach? New alignment will remove trees and a monument sign on the beach, will these be replaced? New alignment alters the driveway entrance to the parking lot and community center, will the project increase the size of the SCT bus stop, specifically the east bound stop from bridge to Hwy 116? Is the intention to install crosswalks, specifically the N. end from the theater to increase safety?</p> | <p>Sonoma County staff are coordinating directly with the Monte Rio Recreation and Park District. Any impacts to their facilities will be discussed directly with the district. Compensation or compensatory actions will be agreed to during the right-of-way acquisition phase of the project. The right of way phase cannot begin until after the CEQA certification of the project.</p> <p>Safety is always prioritized during all projects, and appropriate measures will be taken to ensure safety. Specific questions or requests about the project that are unrelated to environmental impacts have been addressed by County staff.</p> |

| Commenter | Comment/Request | How and Where It Is Addressed |
|---|---|--|
| Sonoma County Regional Parks, Ken Tam | The commenter mentions the planned Dutch Bill Creek Trail, identified at a class 1 bike path in the 2010 Sonoma County Bicycle and Pedestrian Plan. The trial plans to utilize the bridge to cross the Russian River, the replacement project provides opportunity to integrate trail alignment, to reduce foot print and environmental impacts associated building a separate bike and pedestrian use bridge over the river. | See Section 4.16, <i>Traffic and Transportation</i> , for details regarding transportation impacts. The bridge meets the requirements to be designated a Class 1 Bikeway. |
| Sonoma County Transit | SC transit will run 25-foot and 40-foot buses over the proposed project, and are concerned with the turning radius proposed at the n. end of the bridge turning east adjacent to the Monte Rio Theater, and the turning radius at the s end turning west onto Main St. adjacent to Noel’s Automotive. The bus stop at the north side of the theater, project provides opportunity to improve bus stop by extending the sidewalks along the n side of the Monte Rio Theater. | The capability to provide bus service will not be impacted, and bus access is anticipated to be improved. Bus stops will be coordinated directly with the Sonoma County Transit Authority. |
| Organization Comments | | |
| Monte Rio/ Villa Grande LRRMCA, Kyra Wink | Concerns regarding the short notice given from the County regarding the scoping meeting (Less than 24 hrs. notice). Postponement of the meeting until citizens can become aware of right of way issues regarding utility water. This issue needs to be brought to light for all affected customers so that they may weigh in concerns regarding funding so that costs may be resolved in other ways than on the backs of increased rates from Sweet Water Springs Water District. | Section 1.4 above summarizes the public involvement leading up to the preparation of this EIR. The Project Notice of Preparation was circulated on March 22, 2021, inviting members of the public to participate in the virtual public scoping meeting to be held on April 14, 2021 via zoom application. Meeting was help and public comments were received until 5:00 pm on April 21, 2021. |
| Native American Heritage Commission | The commenter mentions requirements under CEQA for tribal consultation and summarizes requirements under AB 52 and SB 18, along with recommendations for conducting cultural resources assessments. | See Sections 4.5, <i>Cultural Resources</i> , and 4.17 <i>Tribal Cultural Resources</i> , for details regarding tribal cultural resources. AB 52 letters were sent out on November 1, 2021. Two Native American Tribes requested formal consultation. Consultation is ongoing with both the Kashia Band of Pomo Indians of Stewarts Point and the Federated Indians of Graton Rancheria. The project does not require the amending of the General Plan or any specific plan pertaining to the site. SB 18 does not apply to this bridge replacement project. |
| Public Comments | | |
| Mel Amato | Commenter states the bridge replacement has not yet been fully approved by FHWA so the EIR meeting is premature. An updated Bridge Inspection Report (BIR) is needed on the existing structure in order to update the Sufficiency Rating | Comment noted. The comment does not pertain to the scope of the EIR. It will be considered by the decision makers prior to a decision on the project. |

Sonoma County
 Bohemian Highway Bridge over the Russian River Replacement Project

| Commenter | Comment/Request | How and Where It Is Addressed |
|---------------------|---|--|
| | <p>(SR). Then a replacement vs rehabilitation comparative cost study needs to be made using the updated BIR and SR. EIR should be rescheduled until the final bridge options have been properly selected by County Supervisors and funding is approved by the FHWA. Commenter states the bridge replacement has not yet been fully approved by FHWA so the EIR meeting is premature. An updated Bridge Inspection Report (BIR) is needed on the existing structure in order to update the Sufficiency Rating (SR). Then a replacement vs rehabilitation comparative cost study needs to be made using the updated BIR and SR. EIR should be rescheduled until the final bridge options have been properly selected by County Supervisors and funding is approved by the FHWA.</p> | <p>The County is following all federal funding requirements.</p> |
| <p>Mary Cheese</p> | <p>Project should not take place until Moscow Road is repaired and functional. Limited evacuation routes exist and bridge construction adds chaos. The S. side of Monte Rio will be greatly impacted.</p> | <p>See Section 4.16, <i>Transportation</i>, for details regarding transportation impacts. The existing bridge will remain open throughout construction. If necessary for use, the evacuation route across the bridge will not be impacted.</p> |
| <p>Kui Chung</p> | <p>The commenter is concerned about the Cliff Swallow colony on the existing bridge, and the potential destruction of the colony if the bridge is demolished. Commenter requests what they can do to help protect the songbirds.</p> | <p>See Section 4.4, <i>Biological Resources</i>, for details regarding impacts to wildlife species.</p> <p>Mitigation Measure BIO-10, Special Status and Migratory Birds. This measure is intended to protect migratory birds. The existing structure will remain in place during the first two years of construction. In the third year, the existing bridge will have a bird barrier installed to exclude Cliff Swallows from using the structure in the months leading to removal.</p> <p>The new substructure will be constructed of concrete and presumed to be suitable habitat for Cliff Swallow nesting.</p> |
| <p>Dean Hartman</p> | <p>Concern for wildlife, specifically Cliff Swallows and Bats. What are planned mitigation to retain colonies?</p> | <p>See Section 4.4, <i>Biological Resources</i>, for details regarding impacts to wildlife species.</p> <p>Mitigation Measure BIO-10, Special Status and Migratory Birds. This measure is intended to protect migratory birds. The existing structure will remain in place during the first two years of construction. In the third year, the existing bridge will have a bird barrier installed to exclude Cliff Swallows from using the structure in the months leading to removal.</p> <p>The new substructure will be constructed of concrete and presumed to be suitable habitat for Cliff Swallow nesting.</p> |

| Commenter | Comment/Request | How and Where It Is Addressed |
|---------------|--|--|
| | | <p>No evidence of bat occupation was observed during biological survey work. Because there is one historical occurrence documented at the site, Mitigation Measure BIO-9 for sensitive bat species will be implemented to minimize the potential to adversely affect bats.</p> |
| Janis Hartman | <p>The commenter is concerned about cliff swallows. Currently there is a large colony living under the bridge, commenter is concerned they may not return if bridge is demolished. A list of benefits cliff swallows provide is included, as well as examples of construction project to cause colony collapse.</p> | <p>See Section 4.4, <i>Biological Resources</i>, for details regarding impacts to wildlife species.</p> <p>Mitigation Measure BIO-10, Special Status and Migratory Birds. This measure is intended to protect migratory birds. The existing structure will remain in place during the first two years of construction. In the third year, the existing bridge will have a bird barrier installed to exclude Cliff Swallows from using the structure in the months leading to removal.</p> <p>The new substructure will be constructed of concrete and presumed to be suitable habitat for Cliff Swallow nesting.</p> |
| Steve Loving | <p>Impacts of southern approach on the mouth of Dutch Bill Creek. What impacts will the footings and abutment have? Details needed for the path of the creek from Main Street to the mouth of the Russian River, Dutch Bill is active spawning site for fish, this year spawning observed w/ in few hundred yards of the creek mouth, ducks also nest in the lower creek. Dutch Bill will be a major attraction in the new W. County park currently under development. Include plans to protect the creek mouth during and after the construction periods.</p> | <p>The project has been design to limit impacts to Dutch Bill Creek. The piers, footings and abutment will be placed outside of the low flow and Ordinary High Water Mark of Dutch Bill Creek. Access will be maintained from Main Street to the Russian River/ mouth of Dutch Bill Creek.</p> <p>The temporary work platform will impact both the Russian River and Dutch Bill Creek. Mitigation Measures have been designed to ensure fish passage and wildlife may pass through the site at all times. The gravel work pad will be removed each season prior to peak migration months for salmonid species.</p> <p>At end of the project, the contractor will endure the mouth of Dutch Bill Creek is restored to pre-project conditions.</p> |
| Mary Mount | <p>Commenter is concerned about Cliff Swallows, and breaking up the colony. Also there is a need for the bridge to serve as auxiliary emergency fire road, fire engines right at bottom of the bridge. Save the swallows and save the bridge is a win win.</p> | <p>See Section 4.4, <i>Biological Resources</i>, for details regarding impacts to wildlife species.</p> <p>Mitigation Measure BIO-10, Special Status and Migratory Birds. This measure is intended to protect migratory birds. The existing structure will remain in place during the first two years of construction. In the third year, the existing bridge will have a bird barrier installed to exclude</p> |

Sonoma County
 Bohemian Highway Bridge over the Russian River Replacement Project

| Commenter | Comment/Request | How and Where It Is Addressed |
|---------------|---|--|
| | | <p>Cliff Swallows from using the structure in the months leading to removal.</p> <p>The new substructure will be constructed of concrete and presumed to be suitable habitat for Cliff Swallow nesting.</p> <p>The existing bridge will remain open throughout construction. Mitigation Measures Trans-1 and Trans-2 will minimize impacts associated with emergency response.</p> <p>An alternatives analysis, Chapter 6 of the EIR, has determined that keeping the existing bridge in place is not a feasible option, and the bridge must be removed due to public safety concerns.</p> |
| Steve Schmitz | <p>SC Transit will run 25-foot and 40-foot buses over the new bridge. Commenter is concerned about turning radius on the north and south ends of the bridge. Also the bus stop at the north side of the Monte Rio Theater. Project provides opportunity to improve the bus stop by extending sidewalks along the north side of the theater.</p> | <p>The capability to provide bus service will not be impacted, and bus access is anticipated to be improved. Bus stops will be coordinated directly with the Sonoma County Transit Authority.</p> |

| Commenter | Comment/Request | How and Where It Is Addressed |
|---|--|-------------------------------|
| Public Meeting Comments | | |
| Public comments received during the CEQA Scoping meeting were closely related to the written comments received leading up to that meeting. Those comments are summarized below. | | |
| Ed Fortner- | Sweetwater Springs, General Manager, concerned about \$800k + price tag for moving water line. Looking for ways to mitigate costs. Mentioned they are a disadvantaged community and environmental justice is a consideration, hopes a federal grant can cover the cost. Said Sweetwater Springs had not been contacted prior to Feb 2021, so had no advance warning or time to get together funds to move. Had talked to prior GM (Steve Mack) who also said no one had contacted Sweetwater. | |
| Brian Grant- | Monte Rio resident, Bike lanes- look at Class 1 vs Class 2 options. General Plan policies and consistency issues may come up. Stated planning docs show Class 1 but design is for Class 2 – would like a Class 1 | |
| Robert Esteves- | Traffic issues, specifically safety issues around diagonal parking at Bartlets Market, and folks backing out as well as making a U turn in to the travel lane. | |
| Sukey Robb-Wilder- | Vice President of Sweetwater Springs- repeated concerns about bridge lane widths and traffic issues, parking concerns. Also rate increase for water due to high costs of moving Sweetwater Water line. Stated will impact “disadvantaged, underserved community.” Wants to know what was done to outreach to utilities. | |
| Ken Tam – | Sonoma County Regional Parks, Department Planner, likes proposed outlook on bridge. Stated Lower RR and Dutch Bill Bike Lanes are in General Plan as Class 1, min width is 8 feet – would like to continue to explore to make it work. Bike paths linking to trails, General Plan consistency. | |
| Sherry Pimslar- | MRRPD representative (Admin) – Had several items – main concern was 1) parking issues for events and overflow parking, and impacts on emergency vehicles, beach use and parking for community use. Also safety issues around culverts during construction- people and boater safety, policing restricted access, keeping river users away from dangerous conditions due to construction (particularly culverts used to move water under the construction work platform) – who is responsible as MRRPD has no lifeguard. Access to Big Rocky beach during bridge demolition. Concern of emergency vehicle access if parking on narrow streets; wanted to know if we would replace the trees removed from the edge of the parking lot (across from theater). Traffic concerns as there is no cross walk from the theater to their parking lot; asked if the project would alter their entrance to the parking lot, including sign, triangle and bus stops, concern about 3 rd year of construction restricting access to Big Rocky Beach. | |
| Stephanie Felch - | Lighting concerns, light orientation- down lighting, arch lighting. Limiting light pollution, asked if the lighting would be dark sky compliant. | |
| Steve Trippe- | Flooding, specifically the 116 end. Flooding at 41 feet at the Monte Rio Theater. Are their ways to mitigate? Other issue was traffic flows, specifically at the triangle on the State Highway and said he is concerned about parking during events. Also- reinforced concerns over light pollution into surrounding areas. | |
| Michelle MacDonald- | Asks about right of access signed more than 24 months ago. Interested in Right of Way needs of the project. | |
| Sukey Robb-Wilder- | reinforced concerns about Sweet Water Springs Water District, supports water to whole community. | |
| Rich Holmer- | Wants document to address the Natural Environment, Birds nesting on Bridge and loss of riparian vegetation. | |

| Commenter | Comment/Request | How and Where It Is Addressed |
|---------------------|--|-------------------------------|
| Brian Grant | Wanted to know if the new bridge can allow for space for a future wastewater line, discussed there is a committee of 4 on waste water committee, there is a study beginning in a few months on wastewater. | |
| Steve Trippe | Sweetwater Springs water line issue | |
| Ed Fortner | Informed Samuel of who to talk to at Sonoma Water re wastewater | |

1.5 Scope and Content

An NOP was prepared and circulated (Appendix NOP), and responses received on the NOP were considered when setting the scope and content of the environmental information in this EIR. Sections 4.1 through 4.19 address the resource areas outlined in the bullet points below. Section 5, *Other CEQA Required Discussions*, covers topics including growth-inducing effects, irreversible environmental effects, and significant and unavoidable impacts. Environmental topic areas that are addressed in this EIR include:

1. Aesthetics
2. Agriculture and Forestry Resources
3. Air Quality
4. Biological Resources
5. Cultural Resources
6. Energy
7. Geology and Soils
8. Greenhouse Gas Emissions
9. Hazards and Hazardous Materials
10. Hydrology and Water Quality
11. Land Use and Planning
12. Mineral Resources
13. Noise
14. Population and Housing
15. Public Services and Recreation
16. Transportation
17. Tribal Cultural Resources
18. Utilities and Service Systems
19. Wildfire

In preparing the EIR, use was made of pertinent County policies and guidelines, certified EIRs and adopted CEQA documents, and other background documents. A full reference list is contained in Section 7, *References and Preparers*.

The alternatives section of the EIR (Section 6) was prepared in accordance with *CEQA Guidelines* Section 15126.6 and focuses on alternatives that are capable of eliminating or reducing significant adverse effects associated with the project while feasibly attaining most of the basic project

objectives. In addition, the alternatives section identifies the “environmentally superior” alternative among the alternatives assessed.

1.6 Lead, Responsible, and Trustee Agencies

The *CEQA Guidelines* define lead, responsible and trustee agencies. The County of Sonoma is the lead agency for the project because it holds principal responsibility for approving the project.

Responsible Agencies are agencies that must issue some form of permit or determination for the project and, thus, rely on the EIR for the environmental documentation required prior to issuing said permit. Potential Responsible Agencies and required approvals for the proposed bridge replacement project are listed below.

1.6.1.1 Federal Agencies

1. *Army Corps of Engineers* - regulates activities that have the potential to affect navigable waters under Section 10 of the Rivers and Harbors Act of 1899 (Section 10 permits) and waters of the United States under Section 404 of the Clean Water Act (Section 404 permit). The Corps would be responsible for determining its jurisdiction over wetlands and waters of the U.S. that would be removed or filled and determining what level of mitigation would be required for that removal/filling.
2. *Environmental Protection Agency* - oversees the analysis of the Army Corps of Engineers regarding the issuance of permits for filling wetlands under Section 404 permits and issues permits for point source discharges to waterways.
3. *U.S. Fish and Wildlife Service* - administers the Federal Endangered Species Act and the Marine Mammal Protection Act. The USFWS is an advisory agency to the Army Corps on Section 404 and Section 10 projects. The USFWS reviews mitigation plans for these projects.
4. *National Marine Fisheries Service* - administers the Federal Endangered Species Act and the Marine Mammal Protection Act as they pertain to marine and anadromous species.

1.6.1.2 State Agencies

1. *Regional Water Quality Control Board (RWQCB)* – regulates discharges to waterways through the adoption of Waste Discharge Requirements (WDR) and National Pollution Discharge Elimination System (NPDES) permits.
2. *Office of Planning and Research* - circulates EIRs for review by State agencies.
3. *The California State Office of Historic Preservation (OHP)* is responsible for administering federally and state mandated historic preservation programs to further the identification, evaluation, registration and protection of California's irreplaceable archaeological and historical resources under the direction of the State Historic Preservation Officer (SHPO), a

gubernatorial appointee, and the State Historical Resources Commission. Includes the California Register of Historical Resources identifies the state's historical resources and what properties are to be protected, to the extent prudent and feasible, from substantial adverse change.

4. *Department of Fish and Game (CDFG)* - has authority to oversee work done in streams pursuant to Fish and Game Code 1601 and 1603. An applicant who proposes to substantially divert the natural flow of a stream, substantially alter its bed or bank, or use any material from the streambed must first enter into a "Streambed Alteration Agreement" with CDFG.
5. *Native American Heritage Commission* - mandated to preserve and protect places of special religious or cultural significance pursuant to Section 5097 et seq. of the Public Resources Code.
6. *Department of Toxic Substances Control* - oversees the clean-up of sites where hazardous substances, have been released.

1.6.1.3 Local Agencies

1. *Sonoma County Permit and Resource Management Department* –reviews and processes roiling permits under Section VIII of the Water Clarity Ordinance of the County of Sonoma, Ordinance No. 3836R (Chapter 23 of the Sonoma County Code) for work in Sonoma Creek.

1.6.2 Other Agencies

In addition to the Lead and Responsible Agencies, including those that may issue some form of permit for the project, the Draft EIR will be sent to Federal, State, and local agencies that provide services in the area. These include:

1. CAL FIRE
2. Association of Bay Area Governments

The Draft EIR will also be sent to any identified trustee agencies. The *CEQA Guidelines* (Section 15386) define "trustee agency" as "a State agency having jurisdiction by law over natural resources affected by a project which are held in trust for the people of the State of California." Trustee Agencies include the California Department of Fish and Game, which has jurisdiction over State fish and wildlife, designated rare or endangered native plants, and game refuges, ecological reserves, and other areas. (See discussion under "State Agencies" above.)

1.7 Environmental Review Process

The CEQA environmental impact review process is summarized below and illustrated in Figure 1-1. The steps are presented in sequential order.

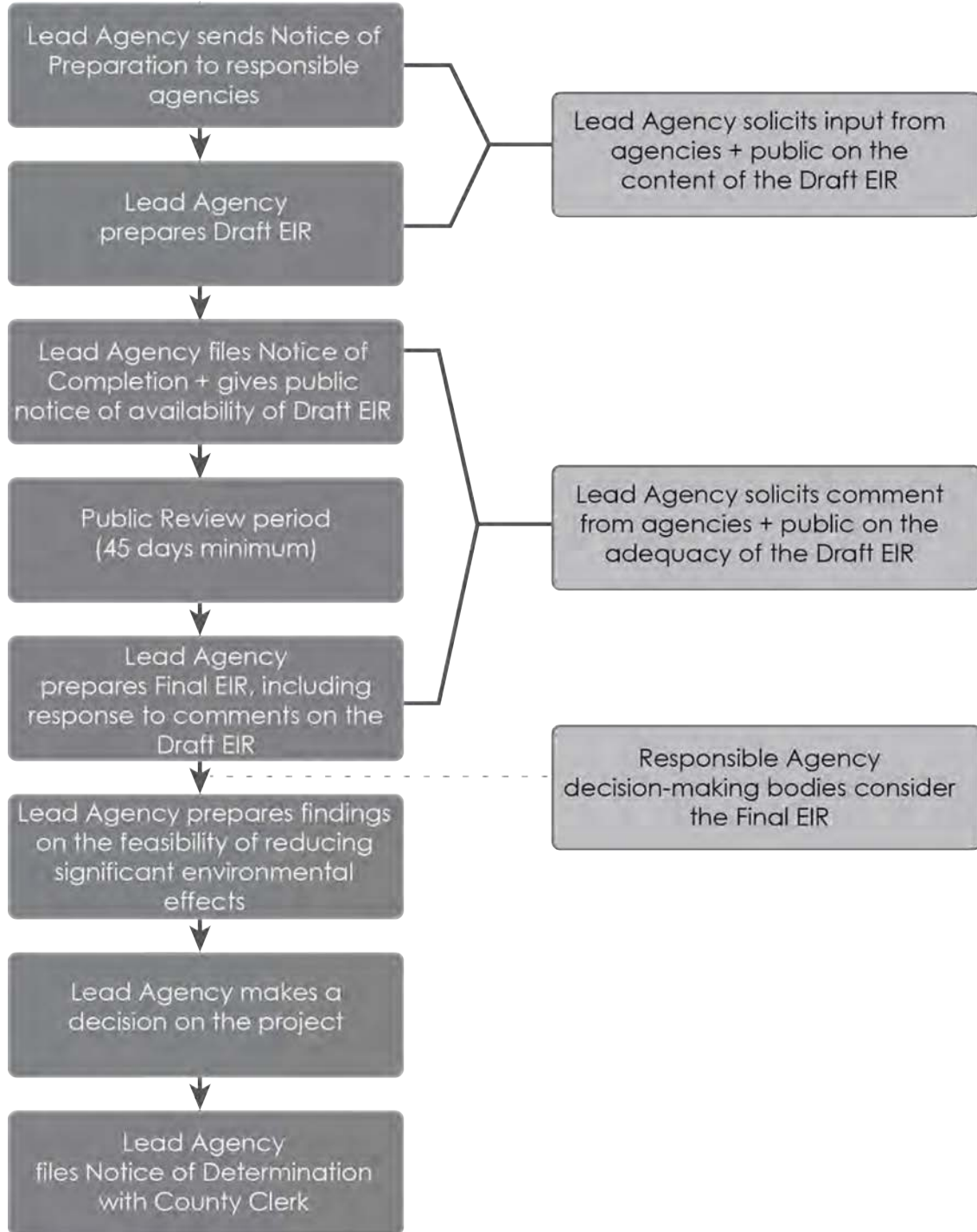
1. **Notice of Preparation (NOP).** After deciding that an EIR is required, the lead agency (County of Sonoma) must file a NOP soliciting input on the EIR scope to the State Clearinghouse, other

concerned agencies, and parties previously requesting notice in writing (*CEQA Guidelines* Section 15082; PRC Section 21092.2). The NOP must be posted in the County Clerk's office for 30 days.

2. **Draft EIR Prepared.** The Draft EIR must contain: a) table of contents or index; b) summary; c) project description; d) environmental setting; e) discussion of significant impacts (direct, indirect, cumulative, growth-inducing and unavoidable impacts); f) a discussion of alternatives; g) mitigation measures; and h) discussion of irreversible changes.
3. **Notice of Completion (NOC).** The lead agency must file a NOC with the State Clearinghouse when it completes a Draft EIR and prepare a Public Notice of Availability of a Draft EIR. The lead agency must place the NOC in the County Clerk's office for 30 days (PRC Section 21091) and send a copy of the NOC to anyone requesting it (*CEQA Guidelines* Section 15087). Additionally, public notice of Draft EIR availability must be given through at least one of the following procedures: a) publication in a newspaper of general circulation; b) posting on and off the project site; and c) direct mailing to owners and occupants of contiguous properties. The lead agency must solicit input from other agencies and the public and respond in writing to all comments received (PRC Section 21104 and *CEQA Guidelines* Section 15088). The minimum public review period for a Draft EIR is 30 days. When a Draft EIR is sent to the State Clearinghouse for review, the public review period must be 45 days unless the State Clearinghouse approves a shorter period (PRC Section 21091).
4. **Final EIR.** A Final EIR must include: a) the Draft EIR; b) copies of comments received during public review; c) list of persons and entities commenting; and d) responses to comments.
5. **Certification of Final EIR.** Prior to making a decision on a proposed project, the lead agency must certify that: a) the Final EIR has been completed in compliance with CEQA; b) the Final EIR was presented to the decision-making body of the lead agency; and c) the decision making body reviewed and considered the information in the Final EIR prior to approving a project (*CEQA Guidelines* Section 15090).
6. **Lead Agency Project Decision.** The lead agency may a) disapprove the project because of its significant environmental effects; b) require changes to the project to reduce or avoid significant environmental effects; or c) approve the project despite its significant environmental effects, if the proper findings and statement of overriding considerations are adopted (*CEQA Guidelines* Sections 15042 and 15043).
7. **Findings/Statement of Overriding Considerations.** For each significant impact of the project identified in the EIR, the lead agency must find, based on substantial evidence, that either: a) the project has been changed to avoid or substantially reduce the magnitude of the impact; b) changes to the project are within another agency's jurisdiction and such changes have or should be adopted; or c) specific economic, social, or other considerations make the mitigation measures or project alternatives infeasible (*CEQA Guidelines* Section 15091). If an agency approves a project with unavoidable significant environmental effects, it must prepare a written Statement of Overriding Considerations that sets forth the specific social, economic, or other reasons supporting the agency's decision.
8. **Mitigation Monitoring Reporting Program.** When the lead agency makes findings on significant effects identified in the EIR, it must adopt a reporting or monitoring program for mitigation measures that were adopted or made conditions of project approval to mitigate significant effects.
9. **Notice of Determination (NOD).** The lead agency must file a NOD after deciding to approve a project for which an EIR is prepared (*CEQA Guidelines* Section 15094). A local agency must file

the NOD with the County Clerk. The NOD must be posted for 30 days and sent to anyone previously requesting notice. Posting of the NOD starts a 30-day statute of limitations on CEQA legal challenges (PRC Section 21167[c]).

Figure 1-1 Environmental Review Process



This page intentionally left blank

Project Description Table of Contents

| | | |
|-----|--|------|
| 2 | Project Description..... | 2-1 |
| 2.1 | Project Sponsor | 2-1 |
| 2.2 | Lead Agency Contact Person | 2-1 |
| 2.3 | Project Background, Location, and Purpose and Need | 2-1 |
| 2.4 | Project Objectives | 2-7 |
| 2.5 | Existing Site Characteristics..... | 2-8 |
| 2.6 | Project Description..... | 2-9 |
| 2.7 | Required Approvals..... | 2-19 |

Figures

| | | |
|------------|--|------|
| Figure 2-1 | Regional Location..... | 2-2 |
| Figure 2-2 | Project Location | 2-4 |
| Figure 2-3 | Project Area | 2-5 |
| Figure 2-4 | Bohemian Highway Bridge – Representative Photographs | 2-6 |
| Figure 2-5 | Draft Visual Simulation of Proposed Steel-tied Arch Bridge, looking east from Sandy Beach* | 2-9 |
| Figure 2-6 | Proposed Replacement Bridge Profile..... | 2-10 |
| Figure 2-7 | Proposed Roadway and Bike Lane Section | 2-11 |

2 Project Description

This section describes the proposed Project, including the Project sponsor, the Project sites and surrounding land uses, major Project characteristics, construction details, and Project objectives.

2.1 Project Sponsor

Samuel Baumgardner-Kranz, Project Manager, Senior Engineer
Sonoma County Department of Transportation and Public Works
2300 County Center Drive, Suite B-1
Santa Rosa, California 95403
(707) 565-2231

2.2 Lead Agency Contact Person

Jackson Ford, Project Manager, Senior Environmental Specialist
Permit Sonoma, Natural Resources Section
County of Sonoma
2550 Ventura Avenue
Santa Rosa, California 95403
(707) 565-8356

2.3 Project Background, Location, and Purpose and Need

Project Background and Location

The County of Sonoma (County), in cooperation with the California Department of Transportation (Caltrans), proposes to replace the Bohemian Highway Bridge (bridge) on a new alignment over the Russian River in the unincorporated community of Monte Rio, Sonoma County, California (Figure 2-1). The existing bridge was constructed in 1934 and was designated locally as a County Landmark in 2003. The bridge provides a critical connection across the lower Russian River in terms of community safety and access, emergency evacuation routes, recreational access, and the local economy. The existing bridge is deficient in terms of current standards for safety and structural integrity during an earthquake event.

The County is the Lead Agency pursuant to the California Environmental Quality Act (CEQA). Caltrans, under authority delegated by the Federal Highway Administration, is the Lead Agency pursuant to the National Environmental Policy Act.

The bridge (Bridge No. 20C0018) is located on Bohemian Highway, a two-lane roadway that runs 10-miles through western Sonoma County from Highway 116 in Monte Rio to Bodega Highway (Highway 12) in the community of Freestone (Figure 2-1). The bridge crosses the Russian River and connects the northern and southern portions of the community of Monte Rio, a popular tourist and recreational area. Public beaches operated by the Monte Rio Recreation and Parks District (MRRPD) are on the north and south sides of the river and include Big Rocky Beach and Sandy Beach on the north side and Dutch Bill Beach on the south side (Figures 2-1 and 2-2). The Project Area includes the existing and proposed bridge alignments, staging and access areas, MRRPD beaches and park areas, MRRPD Monte Rio Community Center, the California Department of Fish and Wildlife (CDFW) Monte Rio Fishing Access, and business along Bohemian Highway and Main Street on the north and south sides of the bridge (Figures 2-2 and 2-3). Representative photographs of the bridge are provided in Figure 2-4.

The bridge was constructed in 1934, and was determined not to be eligible for the National Register of Historic Places (NRHP) in the 2004 Caltrans Statewide Historic Bridge Inventory Update, which received concurrence from the State Historic Preservation Office (SHPO). See section 4.5, Cultural Resources, for a detailed discussion.

The existing bridge has approached the end of its service life, and has been identified as being at seismic risk. Beginning in 1997, extensive discussions between Caltrans and the County, as well as consultation with the public have been undertaken to determine the best approach for resolving the seismic safety concerns: replacement or retrofit. After multiple studies, it was determined that that replacement is the only prudent alternative, as discussed further in the alternatives section of this EIR. The most recent bridge study was completed in 2020 (California Department of Transportation, 2020), and included a discussion of how to resolve the bridge's seismic deficiencies, the cost, and how retrofit compares to a replacement. The report concluded resolution of the structural risks would require substantial alterations to the bridge at a cost greater than the cost of replacement. Beginning in 2015, the replacement option, with various replacement alignments and bridge types were taken to the public in a series of well-attended public meetings and surveys to solicit public input (see Section 6, Alternatives, for additional details).

Purpose and Need

The purpose of the Project is to provide a safe, functional, and reliable crossing on the Bohemian Highway over the Russian River between the north and south portions of the Monte Rio community.

The Project area is in a region of relatively high seismicity. The most recent (2020) Caltrans Bridge Inspection Report (California Department of Transportation, 2019a) for the existing multi span slab bridge notes a number of structural deficiencies and identifies the bridge as fracture critical. The following deficiencies have been observed:

Figure 2-2 Project Location

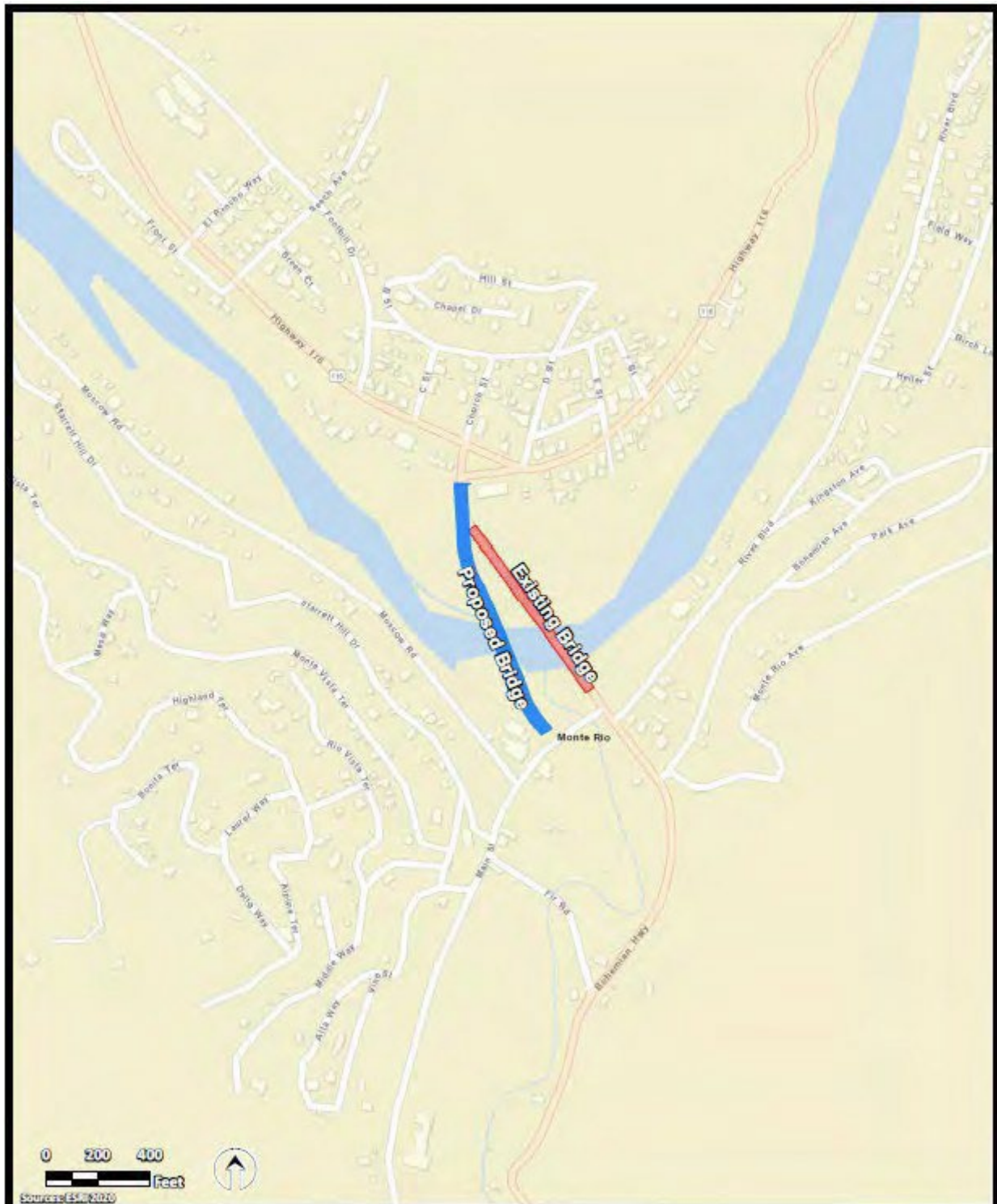


Figure 2-3 Project Area

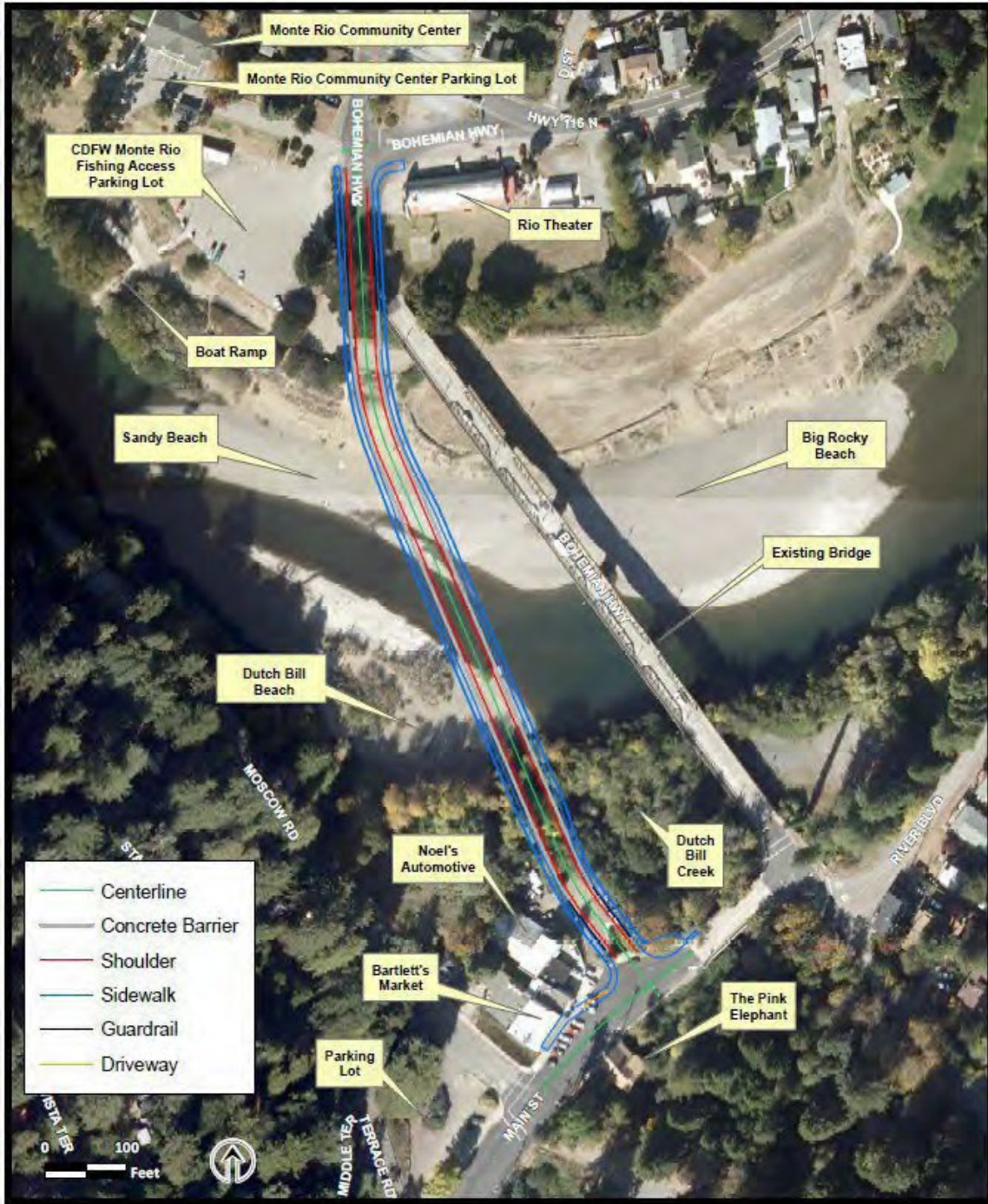
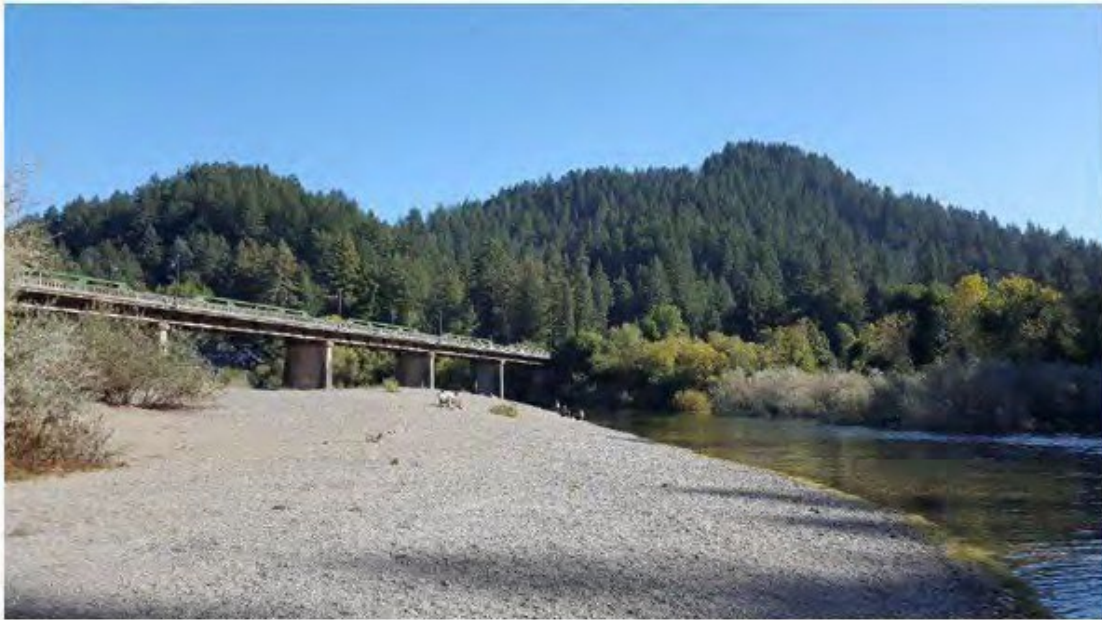


Figure 2-4 Bohemian Highway Bridge – Representative Photographs



Bohemian Highway Bridge over the Russian River, looking southeast from MRRPD's Sandy Beach



Bohemian Highway Bridge over the Russian River, looking south from the north abutment

- The bridge has been identified as being at seismic risk. In 2013, a detailed rehabilitation versus replacement study was performed. The Caltrans Seismic Design Criteria sets parameters for designing a bridge in order to meet an identified earthquake level, which is referred to as a “design level earthquake.” During the study, the bridge was analyzed to see how it would likely perform in a design level earthquake. The study results showed that the bridge is not capable of withstanding a design level earthquake. The study showed that all of the piers had an unacceptable demand to capacity ratio for shear forces in the footings.
- Hydraulic analysis shows that the bridge does not meet the current requirements for freeboard for either 100-year or the 50-year flood events.
- Geotechnical analysis indicates that the south side in particular is prone to liquefaction of multiple layers within the upper 100 feet of the ground surface. On the north side, several potentially liquefiable layers were encountered within the upper 35 feet of the ground surface.

The existing bridge has also been identified as functionally obsolete. The two travel lanes have substandard width, and there are no shoulders. Due to insufficient width, large vehicles such as busses or semi-trailer trucks must cross the bridge alone while other traffic waits. Additionally, the narrow sidewalk width and lack of bike lanes do not provide adequate pedestrian and bicycle safety. The existing bridge does not meet the current American Association of State Highway and Transportation Officials (AASHTO) design requirements (Load Resistance Factor Design [LRFD] Bridge Design Specification with Caltrans Amendments (American Association of State Highway and Transportation Officials, April 2019), nor the design requirements of the California Department of Transportation (Caltrans) Highway Design Manual, 7th Edition, July 2020.

The primary need of the Project is to provide a crossing that meets current seismic design standards. Failure or collapse of the bridge from an earthquake would cause long-term disruption to community, affecting travel, emergency response, evacuation, and the local economy. In addition to seismic safety, the existing bridge is considered substandard in terms of current roadway design standards for lane widths and shoulders. Replacement also allows the opportunity to provide improvements for vehicle, pedestrian and bicycle travel as well as provide a bridge that does not overtop during high river flows.

2.4 Project Objectives

CEQA requires an EIR to include a statement of objectives for the Project, including the purpose of the Project. These objectives help the lead agency determine the alternatives to evaluate in the EIR (CEQA Guidelines, Section 15124, subd. (a)). The County has identified the following objectives for the proposed Project:

1. To provide a bridge that meets current seismic design standards, as failure or collapse of the existing bridge from an earthquake would cause long-term disruption to travel, emergency response, evacuation, and the local economy.
2. To provide a bridge that meets current design standards for vehicular loading
3. To provide a bridge that does not overtop during high river flows
4. To provide a bridge that meets current standards for two-way vehicle traffic
5. To provide a bridge with sidewalks that meet current ADA standards

-
6. To provide a bridge that meets current design standards for bicycle lanes

2.5 Existing Site Characteristics

The existing bridge is a 770-foot concrete and steel structure that carries two lanes of traffic (one 11-foot lane in each direction). The bridge has three 40-foot steel girder approach spans on the north end, and four 37.5-foot steel girder approach spans on the south end. There are five center spans; each span is a 100-foot long steel truss. The truss members extend above the bridge deck and separate vehicular traffic from pedestrian traffic. The bridge superstructure is supported on lightly reinforced concrete piers and abutments on pile footings with 20-foot long timber piles. There are narrow (four-foot wide) raised sidewalks and decorative light poles along both sides of the bridge with aesthetic concrete railings lining the edges of the deck.

The connecting roadway is 30 feet wide and consists of one vehicle lane in each direction with four-foot sidewalks on each side and no striping for bicycle lanes. The south approach to the bridge structure intersects Main Street, and the north approach to the bridge intersects with Bohemian Highway and the vehicle entrance to the MRRPD beaches and Community Center and CDFW Monte Rio Fishing Access parking and boat ramp. The Bohemian Highway begins approximately 300 feet north-west of the bridge where the roadway meets SR 116. The segment of the Bohemian Highway that crosses the Russian River is a major collector road within the western portion of Sonoma County and is a vital link for the Monte Rio community.

Areas directly to the north and south ends of the bridge are occupied by small commercial businesses, including the Monte Rio Theater and Extravaganza (Rio Theatre), Lovett's Nursery and an accountant's office on the north end, and a hair salon, Monte Rio Fire House, Noel's Automotive, Bartlett's grocery market and (currently closed) Pink Elephant restaurant/bar on the south end (Figure 2-3). Beyond the main commercial areas, surrounding land use is generally residential, but also includes other stores and restaurants, a skate park, elementary school, and several inns and hotels along the north and south sides of the river.

A large recreational beach, Big Rocky Beach, is under the north end of the bridge, and a smaller beach, Sandy Beach, is southwest of the bridge. The beaches are operated by MRRPD and used year-round but are most popular during summer months when they attract many tourists. During the summer months, MRRPD also operates a food concession and boat rental on Big Rocky Beach.

Vehicle and pedestrian access to the beaches on the north side of the river is provided through the Monte Rio Fishing Access parking lot directly to the west of the northern bridge approach and a driveway/road from this parking lot that crosses under the existing bridge and leads to Big Rocky Beach east of the existing bridge. The Monte Rio Fishing Access parking lot is owned by CDFW, and operated by MRRPD. An additional access is available to pedestrians at the east end of Big Rocky Beach off of E street. The E street access may be used by pedestrians and bikes, but is usually closed to vehicles by a locked gate, except during large public events (i.e., Fourth of July public fireworks or festivals). Access to Dutch Bill Beach on the south side of the bridge is through a gravel footpath next to Noel's Automotive on Main Street.

In addition to providing access and parking, the Monte Rio Fishing Access includes a boat ramp. The Monte Rio Fishing Access parking lot is used by both MRRPD water/beach recreational users and by fishing and boating recreationists who make use of the boat ramp and delineated pull-thru boat trailer parking stalls. Peak parking for water and beach activities is during the summer and for fishing activities during the winter season, however, this parking lot is used year round.

Views from the bridge include surrounding hills, dense tree canopy, the Russian River, MRRPD beaches, and homes and hotels and inns along the riverbanks. Due to dense tree canopy, the bridge is primarily visible from the north and south approaches, MRRPD parking lot and beaches below, and from homes and hotels and inns along the river with direct line of site.

There are several utilities currently installed on the bridge, including electrical lines, telecommunication conduits, water lines, and gas lines.

2.6 Project Description

The proposed Project includes building a steel-tied arch replacement bridge on a new alignment, located slightly downstream from the existing bridge (Figure 2-3). In addition, the proposed Project includes demolishing the existing bridge, including the permanent removal of three existing bridge bents from the main channel of the Russian River.

The proposed replacement bridge design clear spans the river. The County solicited significant input from the community to design the bridge as an attractive asset that would enhance the community's unique character and serve as a focal point for the community and an attractive destination for visitors (See Section 6 for additional details on public outreach and design selection). Overlooks on each side of the bridge would provide additional river and beach viewing opportunities. Figure 2-5 shows a visual simulation of the proposed bridge.

Figure 2-5 Draft Visual Simulation of Proposed Steel-tied Arch Bridge, looking east from Sandy Beach*

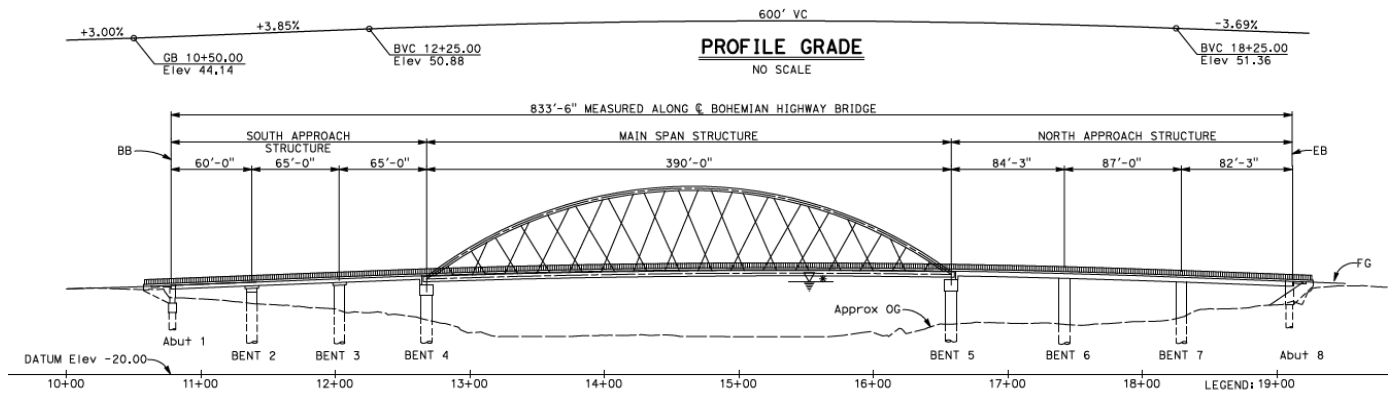


** Note: While the proposed bridge is shown as in gray in this visual simulation, bridge paint color will be determined based on coordination with the community during further public outreach*

The replacement bridge structure would be approximately 846 feet long and composed of the following:

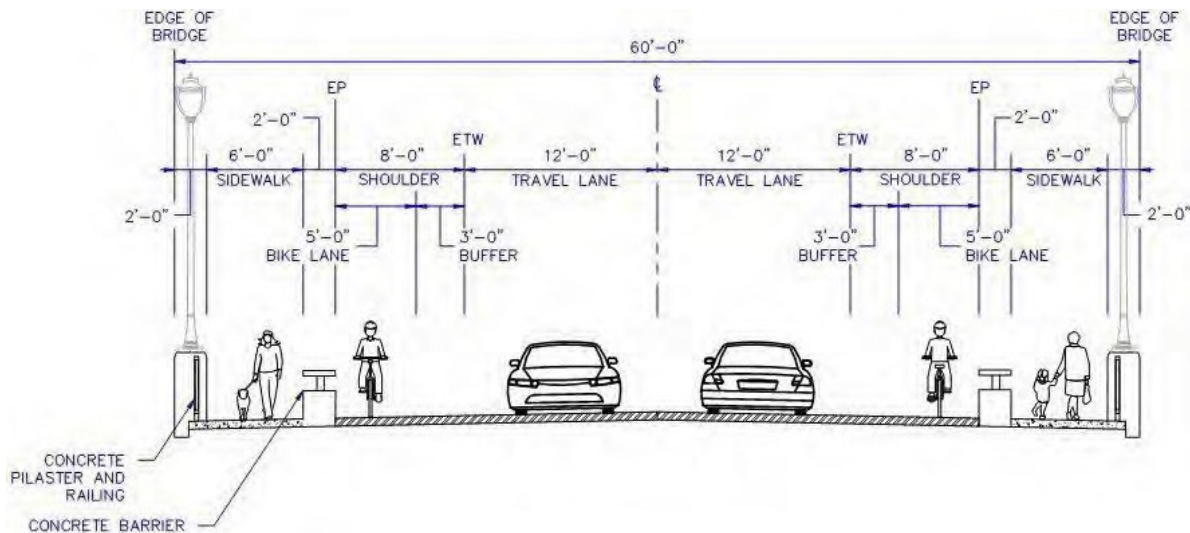
- The south approach would be a precast prestressed concrete voided slab girder structure with three spans ranging from 60 to 65 feet long, with a concrete bridge deck.
- The main bridge structure would clear span the low-flow summer portion of the Russian River channel with a 390-foot long steel tied arch structure. The peak of the arch would be approximately 65 feet high above the deck.
- The north approach would be a precast prestressed concrete voided slab girder structure with three spans ranging from 80 to 85 feet long, with concrete bridge deck.

Figure 2-6 Proposed Replacement Bridge Profile



The proposed roadway would also be designed to meet the current AASHTO design standards, and provide a multimodal route for vehicles, bicycles, and pedestrians. The proposed alignment for the Bohemian Highway Bridge would connect to Main Street west of the existing bridge and east of Moscow Road, and terminate near SR 116 to the north. The proposed roadway cross section would accommodate two 12-foot vehicular lanes (one lane in each direction), concrete barriers, the steel arch members, and 8-foot shoulders/Class II bike lanes adjacent to the travel lanes, and 6-foot wide Class 1 multi-use sidewalk on both sides of the bridge (see Figure 2-7 below, and Appendix A for design plans showing a cross-section of roadway travel land and bike lanes). Signing and striping would be installed per the latest edition of the California Manual on Uniform Traffic Control Devices (MUTCD) Standards.

Figure 2-7 Proposed Roadway and Bike Lane Section



The proposed bridge profile would be raised to meet the 100-year flood level of 47.7 feet, with an ADA-compliant longitudinal grade to accommodate the pedestrians crossing the bridge. The proposed structure would not entirely clear the estimated 100-year flood water levels due to relatively low elevations of the approach roadways and limitations on how much they can be raised; however, preliminary analysis indicates that the proposed structure would be a substantial improvement from the existing structure, in which the existing structure is completely overtopped by flood water during 100-year flood events, to a condition in which less than 100 feet of the proposed bridge superstructure at the approaches would undergo pressure flow or become overtopped.

The southern approach roadway improvements would extend to the east and west along Main Street and would conform to existing grade within approximately 150-feet of the replacement bridge. Access to Noel's Automotive shop from Main Street would be maintained.

Reinforced concrete retaining walls on either side of the north approach roadway would support the embankment soil. The approach roadway improvements would extend east along Bohemian Highway (adjacent to the Monte Rio Theater and Extravaganza), west into the MRRPD Community Center/Monte Rio Fishing Access parking lot entrance, and north along Bohemian Highway toward SR 116. Approach work on the north approach roadway would conform to grade within approximately 300 feet of the end of the replacement bridge and would not encroach into Caltrans right-of-way (ROW) on SR 116. Embankment fill would be used to raise the roadway to the extent possible and reduce the existing low point in this location and improve drainage.

When the pre-1934 bridge was removed, and the current existing bridge constructed, a pier footing was left in the river channel, near the mouth of Dutch Bill Creek. The remnants of this pier footing are visible in the summer months during lower river flows (See Appendix A, Design Plans). The pre-1934 remnant pier footing will be removed as part of the Project, to improve hydrology and fish habitat in the immediate vicinity of the proposed bridge per a request from National Marine Fisheries Service (NMFS).

In addition, through discussions and an additional request from the NMFS for habitat improvements in the area, the County will provide for a restoration project within Dutch Bill Creek that will be implemented by a local, experienced restoration practitioner in the amount of \$250,000. Funds for this restoration project will be provided to a local conservation agency/practitioner with experience in Dutch Bill Creek on or before the start of construction. Approval of the proposed restoration project will be subject to review and approval by NMFS to ensure that the project results in long-term benefits to the listed salmonid species. Eligible restoration projects are categorized as follows: instream habitat improvements, instream barrier modification for fish passage improvement, streambank and riparian habitat restoration, upslope watershed restoration, removal of small dams (permanent, flashboard and other seasonal), creation of off-channel/side-channel habitat features and water conservation projects (developing alternative off-stream water supply, water storage tanks, and water measuring devices).

All utilities currently on the existing bridge would require relocation to the proposed new bridge. These utilities include electrical lines, telecommunication conduits, water, and gas lines. Decorative streetlights would be provided on the proposed bridge, in a style similar to those on the existing bridge. Improvements of existing utilities would be coordinated with utility owners to identify the rights and relocation needs. Existing overhead power pole and guywires located on Bohemian Highway at the entrance to the MRRPD Community Center/Monte Rio Fishing Access parking lot would be relocated behind the proposed sidewalk. This relocation would include all overhead electrical and telecommunication lines joining at that power pole. Existing storm drain inlets would be relocated in accordance with the new horizontal geometry and stormwater treatment elements would be included in compliance with regulatory requirements.

The Project would be subject to the requirements of the 2015 Phase I Municipal Storm Sewer Systems (MS4) Permit issued by the North Coast Regional Water Quality Control Board or subsequently issued MS4 permit. This permit requires Low Impact Development (LID), which, for this Project, entails stormwater capture (to not increase runoff rates), and treatment of stormwater runoff from paved areas. The replacement bridge deck would drain via deck drains that outlet to the storm drain and/or storm water treatment system at the ends of the bridge. Sidewalks may be drained directly onto the roadway or may have separate drain inlets. Post-construction Storm Water Best Management Practices (BMPs) would be implemented to achieve any required permanent water quality treatment and volume capture of the Project area. It is anticipated that stormwater treatment basins, above ground, of approximately 100 square feet by two- to three-feet in depth would be required near each replacement bridge abutment.

As discussed below, a portion of the Monte Rio Fishing Access parking lot would be utilized for construction staging. However, access to and use of Big Rocky Beach and its concession and boat rental areas, and the Monte Rio Fishing Access boat ramp would remain open during construction. In addition, the County will provide 100% of currently available parking Monte Rio fishing Access parking for the duration of construction activities. Additional temporary parking may be achieved through temporary restriping of other parking areas, resulting in more efficient use of these areas or through temporary use of other parking areas in the Project vicinity.

Proposed improvements would require ROW acquisitions and maintenance and construction easements from a number of parcels. Appendix A includes a map showing approximate ROW needs for Project construction.

On the north side of the river, ROW needs include a small (approximately 0.06 acre) ROW acquisition of the CDFW Monte Rio Fishing Access parking lot (Assessor's Parcel Number [APN] 094-100-035) for the replacement bridge northern roadway approach and a partial ROW acquisition of

Sandy Beach (APN095-160-001) for the bridge structure. Following construction, the Monte Rio Fishing Access parking area would be improved as part of the Project such that post-construction, the parking area would have approximately the same parking area and parking stall capacity that it does currently. Proposed parking improvements include the construction of a retaining wall at the western edge of the parking lot to increase level parking surface areas, improve drainage, and resurfacing parking areas.

On the south side of the river, partial acquisition of the parcel (APN#095-160-006) located adjacent to Main Street, northeast of the proposed southern conform contains riparian trees adjacent to Dutch Bill Creek and is also partially used as parking lot for vehicles of the automotive repair shop would be required. Full acquisition of the adjacent parcel located along Main Street (APN 095-160-005) (also used for automotive repair shop vehicle parking) would be required. Depending on final bridge geometry and final grading in this area, some parking beneath the replacement bridge structure may be retained. Additional partial ROW acquisitions would be required along the south side of the river, including along Dutch Bill Beach (APN 094-110-001) and three other parcels (APNs 095-160-002, 095-160-003, and 095-160-006).

Potential uses of the abandoned ROW may include open space or recreational area. Currently the County is in discussions with MRRPD about revegetation for the abandoned ROW and the plan is to revegetate this area in coordination with input from MRRPD. If needed, the County would undertake any additional environmental review and/or permitting for specific uses or transfer of ownership as required for the abandoned ROW.

In addition to permanent acquisitions, temporary construction easements on the adjacent properties near the intersections of Main Street/Bohemian Highway and Bohemian Highway north and west of the Monte Rio Theater would be required during Project construction. Construction access to and along the river would be necessary to construct the abutments for the replacement bridge in the northerly and southerly riverbanks, as well as the bridge piers and bridge deck, as well as for the demolition of the existing bridge. Approximate areas for construction and maintenance easements required are shown on the ROW Map in Appendix A.

Anticipated Construction Schedule and Methods

Project construction would be completed in three construction seasons, with no work proposed on weekends and holidays. Construction staging drawings are included in Appendix A and described below. The first and second construction seasons would be for construction of the replacement bridge and approach work, while the third construction season would be for completion and opening of the replacement bridge, as well as demolition of the existing bridge. Work within top of bank and outside of the low flow channel would begin April 15, and work in the low flow channel (in water) would be from June 15 to October 15, pending approval from regulatory agencies. The key construction events would be as follows:

Season One

Construction staging areas during the first season are anticipated to be in a portion of the Monte Rio Fishing Access/MRRPD parking lot, on Sandy Beach north of the river and west of the existing bridge, and potentially in the parking lot located southwest of the intersection of Main Street and Moscow Road.

In order to construct the replacement bridge on the south side, an approximately 30-foot-wide by 150-foot-long access path would be constructed on the southern side of the Project area along the

western bank of Dutch Bill Creek, roughly along the existing access pathway to the river next to Noel's Auto-motive. The bank would be cleared and grubbed of vegetation to allow construction worker and equipment access to the construction area, and the bank would be graded outside of the wetted channel and ordinary high water mark to install a work pad for construction equipment.

On the northern side of the Project area, an approximately 30-foot-wide by 400-foot-long access path would be constructed between the Monte Rio Fishing Access parking lot and Sandy Beach west of the new bridge alignment. It is expected that this access path would be in place through completion of construction. Public vehicle and pedestrian access to Big Rocky Beach outside of the construction zone would be through the existing driveway from the Monte Rio Fishing Access/MRRPD parking lot to the parking area east of the existing bridge.

Public access to the boat ramp west of the Project construction area and restroom facilities across from the Monte Rio Fishing Access/MRRPD Community Center would be maintained via the existing paved access road through the MRRPD Community Center parking lot and west of the parking lot.

To construct the bridge on the north side of the river, an approximately 40-foot-wide by 45-foot-long gravel work pad would be installed at the edge of Sandy Beach. The gravel work pad would be installed just within the wetted channel/ordinary high water mark of the river, leaving approximately 50 feet of river channel unrestricted and open for passage. Depending on site conditions and water levels during the first year of construction, portions of the gravel pad are expected to be outside the wetted channel of the river.

The pad would be constructed with imported, clean, river-run material brought in by trucks. To construct the work pad, gravel would be placed in the river by slowly pushing it out from the dry riverbed/beach using a bulldozer in a way that would not impound water and trap fish. A top layer of compactable aggregate (likely separated by a layer of filter fabric) may be used on top of the river gravel to support the weight of construction equipment.

The piles, bent caps, and abutment walls/wingwalls would be constructed during the first season of construction. In order to prevent drilled holes from collapsing during drilling, a vibratory hammer would vibrate or twist steel casings for the CIDH piles. A drill rig would drill the holes within the casing. If drilling muds are used to keep the hole from collapsing, a mud that is non-toxic to aquatic life would be used and all muds would be contained. The drill spoils may be temporarily stockpiled in the staging areas and would be loaded onto trucks and removed for disposal in following regulatory permit requirements. All stockpiling would be consistent with stormwater pollution prevention plan requirements. Any water encountered during drilling would either be pumped upslope for disposal on nearby lands in a way that would prevent it from flowing back into any waterway or pumped directly into trucks and disposed of away from the river channel in an upland area in accordance with Project permit requirements. After the steel cages are installed in the pier hole, concrete would be pumped from trucks into the casings and water that came in contact with wet concrete would be pumped to trucks and disposed of in a permitted manner. Falsework towers would be required for construction of the reinforced concrete bent caps. Equipment to construct the replacement bridge would include drill rigs, cranes, backhoes, and concrete trucks.

Following construction or by October 15, or as agreed to by the resource agencies, all falsework would be removed and the compactable aggregate would be removed from the channel while the river-run gravel would remain in place to be washed away during winter flows.

Retaining walls will be constructed at the north approach of the bridge at the end of the first construction season and may continue beyond the October 15 timeline since they are outside the top of bank. It is likely that the retaining walls would need to be supported on CIDH piles. It is

anticipated that construction of the piles would require the use of temporary casings and depending on ground water levels during construction, the use of slurry may be required. Shoring may be required to protect the existing roadway during construction of the walls. Standard BMPs for erosion would be used to contain dirt disturbed by construction activities. Groundwater encountered during construction of piles would be captured and pumped upslope for disposal on nearby lands in a way that would prevent it from flowing back into any waterway or pumped directly into trucks and disposed of away from the river channel in an upland area in accordance with Project permit requirements. Slurry used for constructing piles would be captured and disposed of in a permitted manner.

Season Two

Construction of the bridge superstructure and the roadway approaches would be completed during the second season. During the second construction season, it is anticipated that construction staging areas would remain unchanged from the first construction season; however the public vehicle and pedestrian access to Big Rocky Beach on the north side of the river would be shifted slightly to the west to accommodate the construction of the replacement bridge approach and abutment. Vehicle, bicycle, and pedestrian access to the beach will remain open during construction activities with traffic control as needed.

Construction of the proposed northern abutment would be completed adjacent to the existing northern abutment and would require staging of traffic to maintain access to the existing bridge. It is anticipated that traffic may need to be temporarily restricted to a single lane during some phases of construction for the north abutment and the adjacent 30-foot slab span. On the south end, traffic control would be required for construction of the southern approach to the bridge and may require temporary restriction of traffic to a single lane during paving. Traffic control would follow the MUTCD Work Area Traffic Control Handbook (2009).

On the south side of the river, the construction access path would be extended north from its location during the first season to extend down slope towards the river, ending at the water's edge. It is estimated that the construction access path would be approximately 30-feet wide by 330-feet long. On the north side of the river, the construction access path from the Monte Rio Fishing Access parking lot to Sandy Beach west of the replacement bridge would remain unchanged.

Falsework would be required to construct the north and south precast prestressed concrete voided slab girder, and falsework towers may be required for construction of the steel arch span across the river. To provide access for construction equipment and to support falsework to construct the bridge across the flowing portion of the river, it is anticipated that a gravel work pad over large pipe culverts (to allow for the diversion of water through the construction work area) would be constructed across the width of the Russian River. The gravel work pad would extend approximately 90 feet east and west of the replacement bridge footprint (approximately 180-feet long total), and the pipe culverts would extend approximately 15-feet beyond the gravel work pad. The pad would be constructed with imported, clean, river-run material brought in by trucks.

At the outlet of Dutch Bill Creek to the Russian River, if water is flowing from the creek to the river, a pipe culvert would be installed to convey water from the mouth of Dutch Bill Creek, under the gravel work pad, and into either the river or into one of the pipe culverts conveying the flow of the river through the work pad.

To construct the work pad, gravel would be placed in the river by slowly pushing it out from the dry riverbed/beach using a bulldozer in a way that would not impound water and trap fish. A

USFW/CDFW qualified biologist would be on-site to monitor the construction of the work pad and water by-pass, described below.

The river water by-pass would be constructed with culverts placed along the channel bottom. Necessary preparation to seat the pipes into functional positions may include utilizing a long-reach excavator arm or crane to place pipes. A gravel diversion dam would be constructed at the head of the culverts to direct water into the pipes, and then a filter dam would be constructed at the downstream end, creating a confined pool of water between the dams. The diversion dam would be lined with impermeable plastic and the filter dam would be lined with filter fabric. The work pad would be completed by filling in the confined pool between the two dams with imported clean river run gravel and adding a top layer of compactable aggregate rock (likely separated by a layer of filter fabric) on top of the river gravel to support the weight of construction equipment. If any fish were present in the confined pool, they would be captured and relocated by a qualified biologist following an approved USFWS/CDFW fish relocation plan.

Following the completion of in-channel work, and prior to October 15, the work pad would be removed as described below:

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

Work outside of the low flow channel, such as completion of the retaining wall at the north approach, conform paving, above deck construction, and revegetation would continue beyond the October 15 or end of the dry season timeframe, as permitted by the agencies.

The replacement bridge would be opened at the end of the second season or early in the third season.

Season Three

During the third construction season, the replacement bridge would be completed and the existing bridge would be removed.

Construction staging areas during the third season are anticipated to be the same as in the first season (i.e., in a portion of the Monte Rio Fishing Access parking lot, on Sandy Beach north of the

river and west of the existing bridge, and potentially in the parking lot located southwest of the intersection of Main Street and Moscow Road); however in the third season, the construction area would be expanded east of the existing bridge to allow for demolition of the bridge.

To allow for removal of the existing bridge, a gravel work pad water by-pass similar to what was described in the second season would be installed across the width of the flowing river channel under the existing bridge at Big Rocky Beach using similar methods. The gravel work pad would extend approximately 60 feet west and 40 feet east of the existing bridge footprint (approximately 230-foot-long total), and the pipe culverts would extend approximately 20 feet beyond the gravel work pad.

The existing bridge would be demolished likely by either saw cutting the bridge deck in sections or jack-hammering; the existing piers would be cut below grade, approximately four feet below river bottom.

In order to prevent debris from falling into the river, a protective structure or catch would be utilized under the bridge deck, and all material removed from the river channel and disposed of in a permitted manner.

The southern abutment would remain in place and the top few feet of the abutment wall and wingwalls would be removed to reduce loading and to hide the old abutment. The face of the abutment would then be buried under fill and RSP; the RSP may be buried or partially buried. If feasible, as natural light allows, RSP would be planted with vegetation. The southern approach to the existing bridge structure may be revegetated. It is estimated that the area of the RSP would be approximately 30-feet wide by 120-feet long under both options.

For the northern abutment, it is expected that the upper few feet would be demolished and the remaining abutment and embankment in the area would be buried in RSP. The RSP may be buried or partially buried. It is estimated that the area of RSP would be approximately 75-feet wide and 160-feet long. RSP would be planted, as natural light and conditions allow. All access roads would be regraded to match existing topography and appropriate erosion control BMPs, including revegetation, would be applied.

Public Access during Construction

Access to the MRRPD Community Center parking lot directly adjacent to the Community Center and Monte Rio Fishing Access boat ramp would be maintained throughout all three construction seasons. The majority of the larger Monte Rio Fishing Access paved parking lot to the south of the Community Center would be used as a construction staging area for all three construction seasons and throughout the remainder of the year. During the first and second season of construction, the majority of the lower beach parking east of the existing bridge (adjacent to Big Rocky Beach) would be maintained. During the third season of construction, for the existing bridge demolition, the eastern half of the Big Rocky Beach parking lot would be available. Access to the beach would be provided through the Monte Rio Fishing Access upper parking lot and beach access road, with traffic control as needed. It is expected that the access road to the beach would be separated from the construction work by K-rails and fencing to provide a physical barrier between beach goers and construction activities. Where the access road crosses under any construction activities, such as under the existing bridge during demolition, protective covers would be constructed to protect cars and pedestrians from debris. A construction control flagger may be provided where public access and construction staging areas converge.

River users wishing to pass downstream through the construction area during construction seasons two and three (when the gravel access pads would be installed in the river) would portage around the work site. The portage route would include exiting the water along Big Rocky Beach and following the beach parking and Monte Rio fishing Access driveways to the Monte Rio Fishing Access boat ramp to reenter the river downstream of the construction work site. River users wishing to pass through the construction area in the upstream direction would reverse this route. Signage would be provided to inform river users of changed conditions and direct them to a clearly defined route around the construction site. Alternative locations to enter the river upstream of the construction site would also be provided on signage to inform river users of additional options for entering the river. Vacation Beach, approximate 2 miles from the Project site may be such an option. In addition, the boat ramp currently under construction at the Sonoma County Regional Parks' Guerneville River Park for un-motorized boats may also be available. The culvert and work pad will be cordoned off, and water users will not be permitted to approach the culverts or work areas. The culvert inlets and outlets will also be fenced such that aquatic species may move thru, but that water users will not have access to protect their safety.

The staged construction design would provide sufficient access for all vehicles, pedestrians, and bicyclists to maintain continuous movement throughout construction, with traffic control as needed. Beach and river access would be partially limited during construction of the replacement bridge structure and the demolition of the existing bridge; however, construction staging is designed to allow for optimum public access and usage while maintaining appropriate safety standards to protect the public and construction workers.

Continuous access to businesses and residential properties will be maintained during construction. Signage will be implemented to inform the public of any changed conditions due to construction and options for accessing the beach and businesses in the Project area.

Project Completion

Following the last phase of Project construction, the following activities will occur:

- All debris from the river channel and staging areas will be removed. All disturbed beach areas will be regraded to match existing contours.
- Any disturbed areas of the Big Rocky Beach parking lot will be regraded to match existing contours
- All disturbed naturalized and developed areas will be revegetated with native vegetation and landscape plants, including the abandoned bridge ROW, in coordination with MRRPD and CDFW, in the fall/winter following Project completion
- The MRRPD/Monte Rio Fishing Access parking lot will be repaved and restriped and reopened
- The paving of unimproved path from Main street to Dutch Bill Creek will occur, in coordination with MRRPD
- The addition of bike racks, TBD in coordination with MRRPD and CDFW
- The Bridge will be open to vehicles, bike and pedestrians

2.7 Required Approvals

The proposed Project would require various environmental approvals from State and Federal agencies. See each topical section for these details.

This page intentionally left blank

Environmental Setting Table of Contents

| | | |
|-----|-----------------------------|-----|
| 3 | Environmental Setting | 3-1 |
| 3.1 | Regional Setting | 3-1 |
| 3.2 | Project Site Setting | 3-1 |
| 3.3 | Cumulative Development..... | 3-1 |

3 Environmental Setting

This section provides a general overview of the environmental setting for the proposed project. More detailed descriptions of the environmental setting for each environmental issue area can be found in section 4, *Environmental Impact Analysis*.

3.1 Regional Setting

The Project Site is located in the County of Sonoma, in the unincorporated Community of Monte Rio. Figure 2-1 in section 2, *Project Description*, provides an overview of the regional location of the Project site.

The Project site is regionally accessible from State Route 116, and the Bohemian Highway.

The Mediterranean climate of the region and the coastal influence produce moderate temperatures year-round, with rainfall concentrated in the winter months. Air quality in the Northern Sonoma Air Quality Management District is in attainment for all air pollutants.

3.2 Project Site Setting

As shown in Figures 2-2 in section 2, *Project Description*, the Project site is located in an urban service area within Sonoma County. The existing land uses of the surrounding parcels include Rural Residential (RR), Rural Development (RRD), Limited Commercial (LC), Neighborhood Commercial (C1), Recreation and Visitor-Serving Commercial (K), and Public Facilities (PF). The Project Site is mostly a developed area, as depicted in Figure 4.11-1 in the EIR section 4.11, *Land Use and Planning*.

The environmental setting as it relates to individual impact section analysis are provided within each impact area described in section 4, *Environmental Impact Analysis*. Each of these sections describes the baseline physical conditions of the site as established on March 22, 2021, when the County published the NOP. Physical conditions that may have changed after this day may be included for informational purposes only.

3.3 Cumulative Development

In addition to the specific impacts of individual projects, California Environmental Quality Act (CEQA) requires Environmental Impact Reports (EIR) to consider potential cumulative impacts of the proposed Project. CEQA defines “cumulative impacts” as two or more individual impacts that, when considered together, are substantial or will compound other environmental impacts. Cumulative impacts are the combined changes in the environment that result from the incremental impact of development of the proposed Project and other nearby projects. For example, traffic impacts of two nearby projects may be less than significant when analyzed separately but could have a significant impact when analyzed together. Cumulative impact analysis allows the EIR to provide a reasonable forecast of future environmental conditions and can more accurately gauge the effects of a series of projects.

Cumulative analyses is provided in Section 4, *Environmental Impact Analysis*, and is further summarized in section 5, *Other CEQA Required Discussions*.

This page intentionally left blank

Environmental Impact Analysis Table of Contents

| | | |
|------|--|--------|
| 4 | Environmental Impact Analysis | 4-1 |
| 4.1 | Aesthetics | 4.1-2 |
| 4.2 | Agriculture and Forestry Resources | 4.2-1 |
| 4.3 | Air Quality | 4.3-1 |
| 4.4 | Biological Resources | 4.4-1 |
| 4.5 | Cultural Resources | 4.5-1 |
| 4.6 | Energy | 4.6-1 |
| 4.7 | Geology and Soils | 4.7-1 |
| 4.8 | Greenhouse Gas Emissions | 4.8-1 |
| 4.9 | Hazards and Hazardous Materials | 4.9-1 |
| 4.10 | Hydrology and Water Quality | 4.10-1 |
| 4.11 | Land Use and Planning | 4.11-1 |
| 4.12 | Mineral Resources | 4.12-1 |
| 4.13 | Noise | 4.13-1 |
| 4.14 | Population and Housing | 4.14-1 |
| 4.15 | Public Services and Recreation | 4.15-1 |
| 4.16 | Transportation | 4.16-1 |
| 4.17 | Tribal Cultural Resources | 4.17-1 |
| 4.18 | Utilities and Service Systems | 4.18-1 |
| 4.19 | Wildfire | 4.19-1 |

4 Environmental Impact Analysis

This section discusses the possible environmental effects of the Bohemian Highway Bridge over the Russian River Replacement Project for the specific issue areas that were identified through the scoping process as having the potential to experience significant effects. A “significant effect” as defined by the *CEQA Guidelines* Section 15382:

means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

The assessment of each issue area begins with a discussion of the environmental and regulatory setting related to the issue, which is followed by the impact analysis. In the impact analysis, the first subsection identifies the methodologies used and the “significance thresholds,” which are those criteria adopted by the County and other agencies, universally recognized, or developed specifically for this analysis to determine whether potential effects are significant. The next subsection describes each impact of the proposed project, mitigation measures for significant impacts, and the level of significance after mitigation. Each effect under consideration for an issue area is separately listed in bold text with the discussion of the effect and its significance. Each bolded impact statement also contains a statement of the significance determination for the environmental impact as follows:

4. **Significant and Unavoidable.** An impact that cannot be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the project is approved per *CEQA Guidelines* Section 15093.
4. **Less than Significant with Mitigation Incorporated.** An impact that can be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires findings under *CEQA Guidelines* Section 15091.
4. **Less than Significant.** An impact that may be adverse but does not exceed the threshold levels and does not require mitigation measures. However, mitigation measures that could further lessen the environmental effect may be suggested if readily available and easily achievable.
4. **No Impact.** The proposed project would have no effect on environmental conditions or would reduce existing environmental problems or hazards.

Following each environmental impact discussion is a list of mitigation measures (if required) and the residual effects or level of significance remaining after implementation of the measure(s). In cases where the mitigation measure for an impact could have a significant environmental impact in another issue area, this impact is discussed and evaluated as a secondary impact. The impact analysis concludes with a discussion of cumulative effects, which evaluates the impacts associated with the proposed project in conjunction with other planned and pending developments in the area listed in Section 3, *Environmental Setting*. A cumulative impact analysis is presented only where the proposed project would result in either a less significant impact or a significant impact; a cumulative impact analysis is not required or included if the proposed project would result in no impact. The Executive Summary of this EIR summarizes all impacts and mitigation measures that apply to the proposed project.

This page intentionally left blank

Aesthetics Table of Contents

| | | |
|-------|-------------------------|--------|
| 4.1 | Aesthetics..... | 4.1-2 |
| 4.1.1 | Setting..... | 4.1-2 |
| 4.1.2 | Scenic Zoning..... | 4.1-3 |
| 4.1.3 | Light and Glare..... | 4.1-11 |
| 4.1.4 | Regulatory Setting..... | 4.1-11 |
| 4.1.5 | Impact Analysis..... | 4.1-16 |
| 4.1.6 | Cumulative Impacts..... | 4.1-23 |

Tables

| | | |
|-------------|--|--------|
| Table 4.1-1 | Site Sensitivity Criteria..... | 4.1-17 |
| Table 4.1-2 | Site Sensitivity and Dominance Ratings..... | 4.1-19 |
| Table 4.1-3 | Sonoma County Visual Analysis Significance Matrix..... | 4.1-19 |

Figures

| | | |
|---------------|--|--------|
| Figure 4.1-1 | Northern Bridge Approach – Before..... | 4.1-5 |
| Figure 4.1-2 | Northern Bridge Approach – After..... | 4.1-5 |
| Figure 4.1-3 | Sandy Beach – Before..... | 4.1-6 |
| Figure 4.1-4 | Sandy Beach – After..... | 4.1-6 |
| Figure 4.1-5 | Big Rocky Beach – Before..... | 4.1-7 |
| Figure 4.1-6 | Big Rocky Beach – After..... | 4.1-7 |
| Figure 4.1-7 | Bohemian Highway – Before..... | 4.1-8 |
| Figure 4.1-8 | Bohemian Highway – After..... | 4.1-8 |
| Figure 4.1-9 | Southern Bridge Approach – Before..... | 4.1-9 |
| Figure 4.1-10 | Southern Bridge Approach – After..... | 4.1-9 |
| Figure 4.1-11 | Moscow Road – Before..... | 4.1-10 |
| Figure 4.1-12 | Moscow Road – After..... | 4.1-10 |

4.1 Aesthetics

This section evaluates the proposed project for potential impacts on aesthetics, including scenic vistas, scenic resources, visual character and quality, and light and glare.

4.1.1 Setting

The project location and setting provide the context for determining the type and severity of changes to the existing visual environment. The terms visual character and visual quality are defined below and are used to further describe the visual environment. The project setting is also referred to as the study area which is defined as the area of land that is visible from, adjacent to, and outside the highway right-of-way, and is determined by topography, vegetation, and viewing distance.

The proposed project is located on the Bohemian Highway between State Route (SR) 116 and Main Street in the community of Monte Rio, crossing the Russian River. The landscape is characterized by redwood forest, the river and its associated beaches and riparian vegetation. Types of uses within the project area is primarily recreational surrounded by rural residential and commercial but also includes areas of rural recreation. According to the Sonoma County Land Use Map, the project area is designated as Recreation & Visitor Serving Commercial (RVSC), Urban Residential (UR), Limited Commercial (LC), and Public/Quasi Public (PQP) land use designations. Due to the local topography, views to and from the project area are obstructed by landforms and vegetation, minimizing overall viewing distance. However, surrounding recreational land uses are within viewing proximity and provide clear views to the project area.

Landform

The principal site landform is a relatively flat valley with the Russian River running approximately east to west through the valley. From the bridge site, the Russian River and its beaches and riparian vegetation make up the immediately adjacent surroundings, followed by the urban area of downtown Monte Rio on either end of the bridge, as well as rural residences along the banks of the Russian River and the slopes above. Surrounding the developed footprint of Monte Rio, steep forested slopes rise sharply to create the Russian River valley with ridgelines trending north to south and east to west visible from the project area. Elevations range from 40 – 1200 feet in the surrounding area.

Vegetation

The vegetation of the project site consists of riparian woodland that includes willow, maple, California bay, and coast redwood. In visual terms, the existing vegetation constitutes a narrow, sporadic band of riparian vegetation that separates the banks of the Russian River from developed sites, interspersed with development at the river's edge. This riparian vegetation is in the foreground of the redwood and Douglas-fir forests that make up the hills surrounding the project area. The stands of conifers and shrubs remain a relatively constant green in color throughout the year, while some of the deciduous plants will change colors in autumn and drop their leaves in winter.

Project Vicinity

The area around the bridge is developed and is characterized by rural residences, riparian vegetation, beaches, and businesses. Nearby properties are generally moderate in size (1-5 acres)

and mostly consist of residences and businesses. Main roads surround either side of the bridge, with Bohemian Highway to the south, and Highway 116 to the north.

4.1.2 Scenic Zoning

Roadways throughout Sonoma County offer views of scenic areas. The General Plan designates an extensive network of scenic corridors and highways that are protected by development standards. State Route 116 from State Route 1 through Guerneville to the Sebastopol city limit is officially designated as part of the State Scenic Highway system (Caltrans 2019).

The designations have the following intent:

1. **Scenic Resources Combining District (SR):** To preserve the visual character and scenic resources of lands in the county and to implement the provisions of Sections 2.1, 2.2, and 2.3 of the General Plan Open Space Element. SR zoning can indicate that a site is located within a scenic corridor, a scenic landscape unit, or in a community separator as designated in Figures OSRC-5a through OSRC-5i of the Sonoma County General Plan. Regulations for development are contained in Article 64, Section 26-64-020 of the County Zoning Code.
2. **Valley Oak Habitat Combining District (VOH):** To protect and enhance valley oaks and valley oak woodlands and to implement the provisions of Section 5.1 of the General Plan Resource Conservation Element (Sonoma County Code, Section 26-67-005).

While the importance of valley oak woodlands to the environment in the County is discussed in Section 4.4, *Biological Resources*, trees and woodlands are also a distinctive part of the Sonoma County visual landscape and form an important visual resource, where they occur. They also help to soften the effects of urbanization and infill on areas with a more rural character prior to development. Therefore, VOH-zoned Sites were described above, and are discussed later, in the impact analysis, in terms of how tree removal might affect the visual quality of the site. Project Site Visual Assessment

The Sonoma County General Plan addresses aesthetic concerns in its Land Use Element. Therein, policies establish that the visual quality of the communities and open spaces throughout the county are tied to natural resources and that protection of these resources is important to the community, both from an economic perspective and in terms of its sense of place.

The County's Visual Assessment Guidelines were used to determine significance thresholds for visual impacts of the project. The Visual Impacts Analysis (VIA) prepared for the County determined aesthetic impacts by comparing the aesthetics of the current bridge compared to the bridge proposed by the project, as observed from several public viewpoints. To achieve this, photos of the current bridge taken from the viewpoints were compared to visual simulations of the project. The methodology for using the County's Visual Assessment Guidelines can be found in *Section 4.1.6 Impact Analysis*.

These public viewpoints, or Visual Assessment Units in the VIA, were: (1) The Northern Bridge Approach, (2) the beach areas (Sandy Beach, Big Rocky Beach, Dutch Bill Beach, and River Boulevard Businesses), (3) Bohemian Highway Bridge over the Russian River, (4) the Southern Bridge Approach, and (5) Moscow Road.

Figures 4.1-2 to 4.1-13 depict the before and after photo illustrations of the Visual Assessment Units for the bridge replacement project.

Figure 4.1- 1. Northern Bridge Approach - Before



Figure 4.1- 2. Northern Bridge Approach - After



Figure 4.1- 3. SandyBeach - Before



Figure 4.1- 4. SandyBeach - After



Figure 4.1- 5. Big RockyBeach – Before



Figure 4.1- 6. Big RockyBeach - After



Figure 4.1- 7. Bohemian Highway– Before



Figure 4.1- 8. Bohemian Highway- After



Figure 4.1- 9. Southern Bridge Approach – Before



Figure 4.1- 10. Southern Bridge Approach - After



Figure 4.1- 11. Moscow Road - Before



Figure 4.1- 12. Moscow Road - After



4.1.3 Light and Glare

For purposes of this analysis, light refers to light emissions (brightness) generated by a source of light. Stationary sources of light include exterior parking lots and security lighting; moving sources of light include the headlights of vehicles driving on roadways near the Project site. Streetlights and other security lighting also serve as sources of light in the evening hours. Highly visible lights at night can disrupt views of the night sky and have the potential to be seen for miles if geography or vegetation do not intervene. Moving sources of light (i.e., vehicles) easily catch the eye and are difficult to ignore.

Light pollution is an adverse effect of man-made light and can include urban sky glow, glare, and light trespass. Excessive lighting of this type can significantly change the character of rural and natural areas by making the built environment more prominent at night and creating visual clutter (International Dark Sky Association 2020).

The current conditions in the more rural areas include limited light from moving vehicles, street lighting, and structure lighting (both interior lights that emanate from windows and exterior lights in place for security or safety). There is little light spillage from developed uses onto adjacent uses and very little interference with night sky viewing. In more developed areas, lighting is consistent with urban and suburban development, including some streetlights and external security lighting. In developed rural residential areas, light conditions are more intense than the rural areas but less than the sites at the edges of larger cities (e.g., Santa Rosa, Sonoma).

Glare is defined as focused, intense light emanated directly from a source or indirectly when light reflects from a surface. Daytime glare is caused in large part by sunlight shining on highly reflective surfaces at or above eye level. Reflective surfaces are associated with structures that have expanses of polished or glass surfaces, light-colored pavement, and the windshields of parked cars.

Throughout the county, glare is limited by various factors: forestation, limited large or expansive parking lots, and design guidelines in the General Plan that regulate the character of new development and that include placing parking areas out of the view of newly implemented streetscaping (County of Sonoma 2018a).

4.1.4 Regulatory Setting

a. Federal Regulations

No existing federal regulations pertain to the visual resources in the project area.

b. State Regulations

State Scenic Highway Program

Caltrans defines a scenic highway as any freeway, highway, road, or other public right-of-way, that traverses an area of exceptional scenic quality. Suitability for designation as a state scenic highway is based on vividness, intactness, and unity (Caltrans 2008):

1. Vividness is the extent to which the landscape is memorable. This is associated with the distinctiveness, diversity, and contrast of visual elements. A vivid landscape makes an immediate and lasting impression on the viewer.
2. Intactness is the integrity of visual order in the landscape and the extent to which the natural landscape is free from visual intrusions (e.g., buildings, structures, equipment, grading).

-
3. Unity is the extent to which development is sensitive to and visually harmonious with the natural landscape.

Two State-designated scenic highways are in Sonoma County, as described above, and the project is located within the State Highway 116 Scenic Corridor.

c. Local

Sonoma County General Plan

The Scenic Resources section of the Open Space & Resource Conservation Element of the General Plan provides the following goals and policies concerning aesthetics, visual resources, and community design; they apply to the Potential Sites throughout the county, where appropriate.

Goal OSRC-1: Preserve the visual identities of communities by maintaining open space areas between cities and communities.

Objective OSRC-1.1: Preserve important open space areas in the Community Separators shown on Figures OSRC-5a through OSRC-5i of the Open Space and Resource Conservation Element.

Objective OSRC-1.2: Retain a rural character and promote low intensities of development in Community Separators. Avoid their inclusion in City Urban Growth Boundaries or Spheres of Influence. Avoid their inclusion within Urbans Service Areas for unincorporated communities.

Objective OSRC-1.3: Preserve existing groundwater recharge and stormwater detention areas within Community Separators.

Objective OSRC-1.4: Preserve existing specimen trees and tree stands within Community Separators.

Goal OSRC-2: Retain the largely open, scenic character of important scenic landscape units.

Objective OSRC-2.1: Retain a rural, scenic character in Scenic Landscape Units with very low intensities of development. Avoid their inclusion within spheres of influence for public service providers.

Objective OSRC-2.2: Protect the ridges and crests of prominent hills in Scenic Landscape Units from the silhouetting of structures against the skyline.

Objective OSRC-2.3: Protect hills and ridges in Scenic Landscape Units from cuts and fills.

Policy OSRC-2a: Avoid amendments to increase residential density in Scenic Landscape Units in excess of one unit per ten acres. The land use plan may designate a lower density or larger minimum lot size.

Policy OSRC-2b: Avoid commercial or industrial uses in Scenic Landscape Units other than those that are permitted by the agricultural or resource land use categories.

Policy OSRC-2d: Unless there are existing design guidelines that have been adopted for the affected area, require that new structures in Scenic Landscape Units meet the following criteria:

- (1) Site and design structures to take maximum advantage of existing topography and vegetation to substantially screen them from view from public roads.
- (2) Minimize cuts and fills on hills and ridges.
- (3) Minimize the removal of trees and other mature vegetation. Avoid removal of specimen trees, tree groupings, and windbreaks.

-
- (4) Where existing topography and vegetation would not screen structures from view from public roads, install landscaping consisting of native vegetation in natural groupings that fits with the character of the area to substantially screen structures from view. Screening with native, fire retardant plants may be required.
 - (5) Design structures to use building materials and color schemes that blend with the natural landscape and vegetation.
 - (6) On hills and ridges, avoid structures that project above the silhouette of the hill or ridge against the sky as viewed from public roads and substantially screen driveways from view where practical.
 - (7) To the extent feasible, cluster structures on each parcel within existing built areas and near existing natural features such as tree groupings.

Policy OSRC-2e: Use the following standards in addition to those of Policy OSRC-2d for subdivisions in Scenic Landscape Units:

- (1) Establish building envelopes for structures and consider use of height limitations if necessary to further mitigate visual impacts.
- (2) Use clustering to reduce visual impact where consistent with the Land Use Element.
- (3) Locate building sites and roadways to preserve significant existing tree stands and significant oak trees.

Policy OSRC-2f: Identify critical scenic areas within designated Scenic Landscape Units. To the extent allowed by law, consider requiring dedication of a permanent scenic or agricultural easement at the time of subdivision for properties within these critical scenic areas.

Policy OSRC-2g: Consider voluntary transfer of development rights and purchase of development rights programs and make Scenic Landscape Units eligible with owner consent.

Policy OSRC-2h: For development on parcels located both within Scenic Landscape Units and adjacent to Scenic Corridors, apply the more restrictive siting and setback policies to preserve visual quality.

Goal OSRC-3: Identify and preserve roadside landscapes that have a high visual quality as they contribute to the living environment of local residents and to the County's tourism economy.

Objective OSRC-3.1: Designate the Scenic Corridors on Figures OSRC-5a through OSRC-5i along roadways that cross highly scenic areas, provide visual links to major recreation areas, give access to historic areas, or serve as scenic entranceways to cities.

Objective OSRC-3.2: Provide guidelines so future land uses, development and roadway construction are compatible with the preservation of scenic values along designated Scenic Corridors.

Policy OSRC-3a: Apply the Scenic Resources combining district to those portions of properties within Scenic Corridor setbacks.

Policy OSRC-3b: For development on parcels located both within Scenic Landscape Units and adjacent to Scenic Corridors, apply the more restrictive siting and setback policies to preserve visual quality.

Policy OSRC-3c: Establish a rural Scenic Corridor setback of 30 percent of the depth of the lot to a maximum of 200 feet from the centerline of the road unless a different setback is provided in the Land Use Policies for the Planning Areas. Prohibit development within the setback with the following exceptions:

-
- (1) New barns and similar agricultural support structures added to existing farm complexes on parcels in the Diverse Agriculture, Land Extensive Agriculture, Land Intensive Agriculture, and Resources and Rural Development land use categories, and on parcels in the Rural Residential land use category with Agriculture and Residential (AR) Zoning, provided that such structures proposed within a State Scenic Highway or where local design review exists by community choice in an adopted specific or area plan are subject to administrative design review.
 - (2) New barns and similar agricultural support structures that do not require a use permit in the Development Code on parcels in the Diverse Agriculture, Land Extensive Agriculture, Land Intensive Agriculture, and Resources and Rural Development land use categories, and on parcels in the Rural Residential land use category with Agriculture and Residential (AR) Zoning, provided that such structures proposed within a State Scenic Highway or where local design review exists by community choice in an adopted specific or area plan are subject to administrative design review.
 - (3) Maintenance, restoration, reconstruction, or minor expansion of existing structures.
 - (4) Telecommunication facilities that meet the applicable criteria established in the Development Code.
 - (5) Other new structures if they are subject to design review and (a) they are associated with existing structures, (b) there is no other reasonable location for the structure, (c) the location within the setback is necessary for the use, or (d) existing vegetation and topography screen the use.
 - (6) Compliance with the setback would render the parcel unbuildable.
 - (7) Satellite dishes that are not visible from the roadway.

Policy OSRC-3e: In conjunction with Section 2.5 “Policy for Urban Design”, incorporate design criteria for Scenic Corridors in urban areas.

Policy OSRC-3g: Avoid freeway-oriented billboards along designated Scenic Corridors. Establish design criteria for consideration of new freestanding outdoor advertising structures or signs along designated Scenic Corridors to retain visual quality. Consider amortization of existing signs subject to the limitations of State law as a condition of approval for discretionary permits.

Goal OSRC-4: Preserve and maintain views of the nighttime skies and visual character of urban, rural and natural areas, while allowing for nighttime lighting levels appropriate to the use and location.

Objective OSRC-4.1: Maintain nighttime lighting levels at the minimum necessary to provide for security and safety of the use and users to preserve nighttime skies and the nighttime character of urban, rural and natural areas.

Objective OSRC-4.2: Ensure that nighttime lighting levels for new development are designed to minimize light spillage offsite or upward into the sky.

Policy OSRC-4a: Require that all new development projects, County projects, and signage utilize light fixtures that shield the light source so that light is cast downward and that are no more than the minimum height and power necessary to adequately light the proposed use.

Policy OSRC-4b: Prohibit continuous all-night exterior lighting in rural areas, unless it is demonstrated to the decision-making body that such lighting is necessary for security or operational purposes or that it is necessary for agricultural production or processing on a

seasonal basis. Where lighting is necessary for the above purposes, minimize glare onto adjacent properties and into the night sky.

Policy OSRC-4c: Discourage light levels that are in excess of industry and State standards.

Goal OSRC-5: Retain and enhance the unique character of each of the County's unincorporated communities, while accommodating projected growth and housing needs.

Objective OSRC-5.1: Develop Urban Design Guidelines on a community by community basis to achieve the following: compatibility with and connections to surrounding development; community interaction and pedestrian activity; attractive public views; safe and comfortable infrastructure and streetscape improvements for bikes and pedestrians; increased public safety.

Objective OSRC-5.2: Establish community character as a primary criterion for review of projects in Urban Service Areas.

Policy OSRC-5a: Develop Urban Design Guidelines appropriate for each Urban Service Area in unincorporated Sonoma County that reflect the character of the community.

Policy OSRC-5b: Use the following general urban design principles until Urban Design Guidelines specific to each Urban Service Area are adopted.

- (1) Promotion of pedestrian and/or bicycle use
- (2) Compatibility with adjacent development
- (3) Incorporation of important historical and natural resources
- (4) Complementary parking out of view of the streetscape
- (5) Opportunities for social interaction with other community members
- (6) Promotion of visible access to buildings and use areas
- (7) Appropriate lighting levels

Goal OSRC-6: Preserve the unique rural and natural character of Sonoma County for residents, businesses, visitors, and future generations.

Objective OSRC-6.1: Develop Rural Character Design Guidelines to achieve the following: preservation of existing site features contributing to rural character; siting of buildings and development features to blend in with the surrounding landscape; and allowance for rural design features in rural areas.

Objective OSRC-6.2: Establish Rural Character as a primary criterion for review of discretionary projects, but not including administrative design review for single family homes on existing lots outside of Urban Service Areas.

Policy OSRC-6a: Develop design guidelines for discretionary projects in rural areas, but not including administrative design review for single family homes on existing lots, that protect and reflect the rural character of Sonoma County. Use the following general design principles until these Design Guidelines are adopted, while assuring that Design Guidelines for agricultural support uses on agricultural lands are consistent with Policy AR-9h of the Agricultural Resources Element.

- (1) New structures blend into the surrounding landscape, rather than stand out.
- (2) Landscaping is included and is designed to blend in with the character of the area.
- (3) Paved areas are minimized and allow for informal parking areas.
- (4) Adequate space is provided for natural site amenities.

-
- (5) Exterior lighting and signage are minimized.

Sonoma County Code

Section 26-64-010 et seq. provides general direction on development in the Scenic Resources (SR) Combining District including scenic corridors, community separators, and scenic landscape units. It specifies general limitations on scale, massing, density, and design, subject to design review.

The VOH-zoned areas are subject to ordinances that govern tree removal as follows:

Except as provided in subsection (b), when any person cuts down or removes any large valley oak, or any small valley oaks having a cumulative diameter at breast height greater than 60 inches, on any property within the VOH district, such person shall mitigate the resulting valley oak loss by one of the following measures: (1) retaining other valley oaks on the subject property, (2) planting replacement valley oaks on the subject property or on another site in the county having the geographic, soil, and other conditions necessary to sustain a viable population of valley oaks, (3) a combination of measures (1) and (2), or (4) paying an in-lieu fee, which shall be used exclusively for valley oak planting programs in the county. (Article 67, Section 26-67-030)

Finally, some landscape units and scenic corridors are subject to lighting and signage regulations that include limits on intensity, size, and design. These are subject to review and approval based on compliance with the County Code. Throughout the County Code, night sky ordinances govern the degree to which development can be lighted at night, and include stipulations about shielding, orientation, and luminosity.

Community Separators Protection Ordinance

Community Separators are open space or agricultural lands that separate cities and other communities, contain urban development, and provide city and community identity by offering visual relief from continuous urbanization. On November 8, 2016, the Community Separators Protection Ordinance, commonly called Measure K, passed with 81.1 percent approval. Measure K extends voter protections to Community Separator lands for 20 years.

Sonoma 116 Scenic Highway Corridor Study

In 1983, the State legislature passed Assembly Bill (AB) 1026, that added State Route 116 from Highway 101 near Cotati to State Route 1 near Jenner in Sonoma County to the Master Plan of the State Highways Eligible for Scenic Highway Designation. The County had already designated State Route 116 as a scenic corridor, and following the passage of AB 1026, the Sonoma County Board of Supervisors passed a resolution to request that Caltrans conduct studies leading to designation of the route as an Official State Scenic Highway. The ensuing report Caltrans published offers visual quality assessments for scenic corridor segments that include areas where State Route 116 passes close to the Potential Sites.

4.1.5 Impact Analysis

The following section discusses the *CEQA Guidelines* Appendix G thresholds for aesthetics impacts and includes an evaluation of the setting described above relative to the thresholds listed below.

a. Methodology and Thresholds of Significance

Methodology

Evaluating visual impacts can be relatively subjective, but for CEQA analysis, aesthetic impacts are assessed by using methodologies that identify and describe the visual resources, determining the level of quality from public viewing locations, and estimating the level of effect changes to those views would produce. State and federal organizations have developed visual assessment guidelines for various contexts that often provide a basis for the development of local guidelines and standards.¹ Sonoma County published its Visual Assessment Guidelines to provide specific steps and criteria for evaluating aesthetic impacts of development throughout the County (County of Sonoma 2019). In brief, the procedure involves determining public viewing points and describing the existing setting for each site, reviewing photographs of the site to understand potential impacts, characterizing the site’s sensitivity following the matrix offered in Table 4.1-1, and determining the potential visual dominance of the proposed project based on criteria described in table 4.1-2 below. Based on this evaluation, a potential impact is determined in section 4.1.8 Impact Analysis.

As addressed in this analysis, aesthetics refers to visual impacts to the environment, both natural and built, and includes adverse changes that reduce visual quality along with potential increases in glare or light in a project area. Aesthetics or visual resource analysis assesses the visible change and anticipated viewer response to that change.

Site Sensitivity

The visual sensitivity of the project site is rated based on the County’s criteria that generally characterizes a site relative to its aesthetic value to the surrounding community (County of Sonoma 2019). This determination, then, considers both the site itself and the setting in which the site occurs. Criteria used to determine site sensitivity is presented in Table 4.1-1.

Table 4.1-1 Site Sensitivity Criteria

| Site Sensitivity Level | Summary of Site Criteria |
|------------------------|---|
| Maximum | <ol style="list-style-type: none">1. Designated scenic resource, corridor or landscape unit, or community separator2. Natural setting, scenic backdrop3. Visible from designated scenic corridor because of slope or situation on a ridgeline |
| High | <ol style="list-style-type: none">1. Designated scenic resource, corridor or landscape unit, or community separator2. Natural setting, scenic backdrop3. Visible from scenic corridor, public roads, or other public use areas (parks, trails, etc.) because of slope or situation on a ridgeline |

¹ See for example Bureau of Land Management (1984), Federal Highway Administration (2015), and U.S. Forest Service (1996).

| Site Sensitivity Level | Summary of Site Criteria |
|------------------------|---|
| Moderate | <ol style="list-style-type: none"> 1. Rural land use designation or urban designation that is not low sensitivity, but which has no scenic resource designation 2. May be near a gateway or include historic resources 3. Visible because of slope (less than 30 percent) or where significant aesthetic features are visible from public roads or public uses areas (parks, trails, etc.) |
| Low | <ol style="list-style-type: none"> 1. In an urban land use designation with no scenic resource zoning protections 2. Vicinity is characterized by urban development or the site is surrounded by urban zoning designations <ol style="list-style-type: none"> a. No historic character b. Not a gateway to a community 3. Slope less than 20 percent and not on a prominent ridgeline 4. No significant natural vegetation of aesthetic value to surrounding community |

Source: County of Sonoma 2019

Describing the visual character of a site includes details about the natural and human-built landscape features that contribute to the visual character of an area or view. From that data, the sensitivity rating for a project site can be described, along with the surrounding environment on which the project, when implemented, may have an impact. Aspects considered include geology, water features, plants, wildlife, trails and parks, and architecture and transportation elements (e.g., bridges or city skylines). The way visual character is perceived can vary based on the season, the time of day, the light, and other elements that influence what is visible in a landscape. The basic components used to describe visual character are form, line, color, and texture of landscape features and the level of light and glare under existing conditions (County of Sonoma 2019).

Along with the site sensitivity, the visual quality is assessed to rate that sensitivity. Visual quality is a term that indicates the uniqueness or desirability of a visual resource, within a frame of reference that accounts for the uniqueness and “apparent concern for appearance” by concerned viewers (e.g., residents, visitors, jurisdictions) (U.S. Forest Service 1996). A well-established approach to visual analysis is used to evaluate visual quality, using the concepts of vividness, intactness, and unity (Federal Highway Administration 2015), defined as follows:

1. Vividness describes the memorability of landscape components as they combine in striking patterns.
2. Intactness refers to the visual integrity of the natural and human-built environment.
3. Unity indicates the visual coherence and compositional harmony of the landscape as a whole.

Photographs are used to understand the elements that make up visual character and quality and are provided as both points of reference and data sources that support these evaluations.

Visual Dominance

After the site sensitivity is determined, visual dominance is determined based on how prominent a project would be when developed. The development dominance criteria are based on the County guidelines, as follows in Table 4.1-2:

Table 4.1-2 Visual Dominance Criteria

| Dominance | Characteristics |
|-------------|--|
| Dominant | Project elements are strong – they stand out against the setting and attract attention away from the surrounding landscape. Form, line, color, texture, and night lighting contrast with existing elements in the surrounding landscape. |
| Co-Dominant | Project elements are moderate – they can be prominent within the setting, but attract attention equally with other landscape features. Form, line, color, texture, and night lighting are compatible with their surroundings. |
| Subordinate | Project is minimally visible from public view. Element contrasts are weak – they can be seen but do not attract attention. Project generally repeats the form, line, color, texture, and night lighting of its surroundings. |
| Inevident | Project is generally not visible from public view because of intervening natural land forms or vegetation. |

Source: County of Sonoma
2019

Impact Determination

Finally, the visual impact significance is determined by combining the sensitivity with the visual dominance evaluations such that higher levels of sensitivity and dominance combine to create significant impacts and lesser ones to create less than significant impacts, as seen in Table 4.1-3. Once the impact is determined, the County Guidelines offer measures designed to reduce impacts through design, landscaping, materials, screening, and limiting lighting. These are applied to potential impacts by sites where impacts could be significant.

CEQA analysis was conducted using knowledge of thresholds that meet the CEQA Guidelines and industry standards for the assessment of visual impacts. These criteria were then framed within the County’s Visual Assessment Guidelines language/format; while the language is somewhat different, the process is ostensibly the same as are the conclusions.

Table 4.1-3 Sonoma County Visual Analysis Significance Matrix

| Sensitivity | Dominant | Co-Dominant | Subordinate | Inevident |
|-------------|-------------|-------------|-------------|-----------------------|
| Maximum | Significant | Significant | Significant | Less than significant |

| Sensitivity | Dominant | Co-Dominant | Subordinate | Inevident |
|-------------|-----------------------|-----------------------|-----------------------|-----------------------|
| High | Significant | Significant | Less than significant | Less than significant |
| Moderate | Significant | Less than significant | Less than significant | Less than significant |
| Low | Less than significant | Less than significant | Less than significant | Less than significant |

Source: County of Sonoma 2019

As described above, once the site sensitivity and visual dominance of the project is determined, the determination of visual impact significance is made by:

- a. Establishing the level of visual sensitivity of the site using the criteria discussed Table 4.1-1.
- b. Characterizing the visual dominance of the project by comparing the project’s form, line, color, texture, and lighting against that of the surrounding area as described in Table 4.1-2.
- c. Determining significance of the visual impact by comparing site sensitivity with visual dominance of the project in accordance in Table 4.1-3.

Based on the visual assessment as described in Section 4.1.3, the site sensitivity was classified as High and the visual dominance was classified as Subordinate. Using Table 4.1-3, the aesthetic impacts would be considered Less than Significant.

CEQA Significance Thresholds

The following thresholds of significance are based on *CEQA Guidelines* Appendix G. For purposes of this EIR, implementation of the proposed project may have a significant adverse impact if it would do any of the following:

1. Have a substantial adverse effect on a scenic vista
2. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway
3. In non-urbanized areas, substantially degrade existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality
4. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area

Threshold: Would the project have a substantial adverse effect on a scenic vista?

Impact AES-1 THE PROJECT WILL REMOVE THE EXISTING BOHEMIAN HIGHWAY BRIDGE AND REPLACE IT WITH A NEW BRIDGE. USING THE COUNTY’S VISUAL ASSESSMENT GUIDELINES, THIS PERMANENT IMPACT WAS DETERMINED TO BE LESS THAN SIGNIFICANT. TEMPORARY CONSTRUCTION IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION MEASURES INCORPORATED.

Scenic vistas are considered expansive views from elevated positions, such as those from a roadway in the mountains, or views provided from a public place where the landscape is visible into the distance (e.g., looking at mountains across a field with little intervening development or vegetation). Sonoma County is characterized by a unique scenic beauty that combines agriculture and viticulture in flat valley floors extending into the rolling terrain of the foothills, redwood forests, and grazing lands. The Open Space and Resource Conservation Element of the 2020 General Plan designates several types of scenic resources, including Community Separators, Scenic Landscape Units, Scenic Corridors, and Scenic Highways (County of Sonoma 2008). The project is located in a Scenic Corridor, and adjacent to parcels zoned for scenic resource protection and design guidelines.

The project is designed to not introduce contrasting elements to the existing landscape, and would improve the existing viewshed as the bridge would introduce more natural lines, as opposed to the more angular structure of the existing bridge, and a paint color would be chosen in coordination with the community.

Construction related to the bridge construction and demolition would have temporary impacts that introduce new elements of construction equipment and construction activities. These impacts would be mitigated using Mitigation Measures AES-1 to a less than significant level.

Mitigation Measures

AES-1 Construction Requirements for Visual Impacts

The following measures to avoid, minimize, and mitigate for visual impacts would be incorporated into the project:

- Staging areas would be fenced to reduce visibility and would be kept clean and orderly. Soil and debris piles would be covered when not in active use.
- Vegetation removal would be minimized to the extent feasible. Vegetated areas temporarily disturbed by the project would be restored following project construction using a context sensitive design that is visually compatible with the surrounding landscape and consistent with existing policy regarding wetlands protection and buffers.
- Trees that require removal during project construction would be replaced in the project area at a minimum of a 1:1 ratio.

Significance After Mitigation

With the implementation of Mitigation Measures AES-1, impacts to scenic vistas at the project site would be reduced to less than significant.

| |
|--|
| Threshold: Would the project substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? |
|--|

Impact AES-2 THE PROJECT IS LOCATED WITHIN THE BOUNDARIES OF THE STATE 116 SCENIC CORRIDOR. THE PROJECT WILL REMOVE THE HISTORIC BOHEMIAN HIGHWAY BRIDGE AND REPLACE IT WITH A NEW BRIDGE. ADDITIONAL RESOURCES IN THE CORRIDOR WOULD NOT BE DAMAGED DURING CONSTRUCTION ACTIVITIES. THIS IMPACT IS LESS THAN SIGNIFICANT WITH MITIGATION MEASURES INCORPORATED.

The bridge is located within the Scenic Corridor boundaries of State Route 116. From the intersection of Main Street and Highway 116 in Monte Rio, the bridge is minimally visible, and screened from view along Highway 116 through Monte Rio.

While no work is occurring directly along a state scenic highway, work may be visible from the highway. Some trees may be removed as part of bridge construction and demolition activities that are visible from Highway 116. Mitigation Measure AES-1 would reduce this impact to less than significant.

Mitigation Measures

Mitigation Measures AES-1 would be required.

Significance After Mitigation

With the implementation of Mitigation Measure AES-1 impacts to scenic resources within a state scenic highway would be reduced to less than significant.

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

Impact AES-3 THE REPLACEMENT OF THE BRIDGE WITH A NEW BRIDGE WOULD NOT SUBSTANTIALLY DEGRADE EXISTING VISUAL CHARACTER OF PUBLIC VIEWS OF THE SITE OR ITS SURROUNDINGS. THE PROJECT WOULD NOT CONFLICT WITH APPLICABLE ZONING OR OTHER REGULATIONS. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION MEASURES INCORPORATED.

The project is located in the urban, developed footprint of Monte Rio, which is surrounded by forested land. The VIA analyzed the aesthetic impacts from various view points, as shown in Figures 4.1-1- 4.1-12. The VIA summarizes the assessments of the project from public vantage points as introducing new visual elements to the viewshed; however, the proposed bridge design would be fully compatible with the existing landscape and maintaining views of surrounding scenic resources.

Temporary construction impacts may temporarily degrade the existing visual character or quality of public views of the site and its surroundings. Mitigation Measure AES-1 would reduce this impact to less than significant.

Mitigation Measures

Mitigation Measures AES-1 would be required.

Significance After Mitigation

With implementation of Mitigation Measures AES-1, impacts would be reduced to less than significant.

| |
|---|
| Threshold: Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area? |
|---|

Impact AES-4 PROJECT CONSTRUCTION COULD CREATE NEW SOURCES OF LIGHT OR GLARE THAT COULD ADVERSELY AFFECT THE VISUAL ENVIRONMENT. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION MEASURES INCORPORATED.

The project would temporarily increase the potential for glare as a result of construction activities. Construction activities that could potentially increase light and glare temporarily include the use of heavy equipment and the construction of the new bridge, replacement of the old bridge and vegetation removal to accommodate construction activities.

The new bridge would have decorative streetlights, similar in manner to the existing bridge. Nighttime lighting would be limited to the streetlights along the new bridge, similar to the existing baseline from the current bridge.

There would be no permanent new sources of glare as a result of the project.

Mitigation Measure AES-1 would reduce impacts from temporary construction activities to less than significant.

Mitigation Measure

1. Mitigation Measures AES-1 would be required.

Significance After Mitigation

With implementation of Mitigation Measure AES-1, impacts from light and glare would be reduced to less than significant.

4.1.6 Cumulative Impacts

A project's environmental impacts are "cumulatively considerable" if the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future project" (*CEQA Guidelines* Section 15065[a][3]).

The geographic unit for cumulative aesthetics and visual quality impacts for this project would be the publicly accessible viewshed of the project. No other projects exist or are currently proposed at the project site that impact the viewshed of the Project. There would be no cumulative development facilitated by the project. The replacement bridge would function in the same manner as the existing bridge and would not create new impacts related to light or glare. The need for maintenance of the bridge would be reduced compared to the current baseline, hence limiting visual obstructions caused by the future presence of construction equipment at the site. Therefore, the project would be less than cumulatively considerable.

This page intentionally left blank.

Agriculture and Forestry Resources Table of Contents

| | | |
|------------|--|--------|
| <u>4.2</u> | Agriculture and Forestry Resources | 4.2-1 |
| 4.2.1 | Setting..... | 4.2-1 |
| 4.2.2 | Regulatory Setting | 4.2-5 |
| 4.2.3 | Impact Analysis | 4.2-10 |
| 4.2.4 | Cumulative Impacts | 4.2-12 |

Tables

| | | |
|-------------|--|-------|
| Table 4.2-1 | 2020 Sonoma County Crop Values | 4.2-1 |
| Table 4.2-2 | Sonoma County Farmland Mapping and Monitoring Program Distribution | 4.2-4 |
| Table 4.2-3 | Sonoma County Farmlands Change by Land Use Category from 2014-2016..... | 4.2-5 |

Figures

| | | |
|--------------|--|-------|
| Figure 4.2-1 | Important Farmlands Near Project Site..... | 4.2-3 |
|--------------|--|-------|

4.2 Agriculture and Forestry Resources

This section evaluates impacts to agriculture and forestry resources from implementation of the proposed Project, including direct impacts associated with the conversion of agricultural land to non-agricultural use and potential indirect impacts to adjacent agricultural operations.

4.2.1 Setting

a. Overview of Regional Agriculture

Agriculture is one of the main industries in Sonoma County and provides a very significant base to the County’s economy. Sonoma County can be divided into seven agricultural regions: West County, Russian River to Dry Creek, Santa Rosa Plain, Sonoma Valley, Sebastopol, Petaluma to Cotati, and West Petaluma to Sonoma Coast (County of Sonoma 2018).

Total production value for the County’s agricultural sector in 2020 was \$680,648,600, a 29 percent decrease from 2019 (County of Sonoma 2020). The wine grape crop is the most profitable and benefits from excellent growing conditions, including mild weather and a long growing season. Other prominent crops include milk, poultry, cattle, nursery products, and vegetables. Table 4.2-1 lists the top agricultural commodities and their approximate values for 2020.

Table 4.2-1 2020 Sonoma County Crop Values

| Crop | Value |
|--|---------------|
| Wine grapes – All | \$357,511,500 |
| Milk | \$157,776,800 |
| Miscellaneous Livestock and Poultry | \$43,446,100 |
| Miscellaneous Livestock and Poultry Products | \$33,133,600 |
| Cattle and Calves | \$20,512,600 |
| Nursery – Ornamentals | \$19,477,600 |
| Nursery – Miscellaneous | \$15,031,600 |
| Nursery – Bedding Plants | \$7,745,300 |
| Vegetables | \$5,831,200 |
| Sheep and Lambs | \$5,306,400 |
| Nursery – Cut Flowers | \$4,037,000 |
| Apples – Late Varieties | \$2,398,800 |
| Rey and Oat Silage Crops | \$2,217,100 |
| Apples – Gravenstein | \$1,490,700 |

Source: County of Sonoma 2020

Important Farmlands

The U.S. Soil Conservation Service Important Farmlands Inventory system accounts for lands with agricultural value across the nation. This system divides farmland into five classes based on the productive capability of the land in addition to their soil conditions, as described below. Figure 4.2-1 shows where the farmland types exist near the Project site.

1. **Prime Farmland.** Prime farmland is land with the best combination of physical and chemical features able to sustain long-term production of agricultural crops. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production during the four years prior to the mapping date (the most recent map update for the region is 2016).
2. **Farmland of Statewide Importance.** Farmland of statewide importance is like Prime Farmland but with minor shortcomings, such as greater slope or less ability to store moisture. Land must have been used for irrigated agricultural production during the four years prior to the mapping date.
3. **Unique Farmland.** Unique farmland is of lesser quality soil and is usually irrigated but may include no irrigated orchards or vineyards. Land must have been cropped at some time during the four years prior to the mapping date.
4. **Farmland of Local Importance.** Farmland of local importance is land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee. In some counties, Confined Animal Agriculture facilities are part of Farmland of Local Importance, but they are shown separately.
5. **Grazing Land.** Grazing land is land on which the existing vegetation is suited to livestock grazing. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in grazing activities.

The California Department of Conservation (DOC) maintains a Farmland Mapping and Monitoring Program (FMMP) to quantify economically important farmland and the extent of its conversion. The FMMP Important Farmland Maps account for soil quality and production capacity along with land use information that targets the potential of conversion of these lands to non-agricultural uses. Mapped farmland in Sonoma County accounts for about 56.2 percent of the County land area (DOC 2018, County of Sonoma 2020). The breakdown of farmlands and other lands is provided in Table 4.2-2.

Figure 4.2-1 Important Farmlands Near Project Site

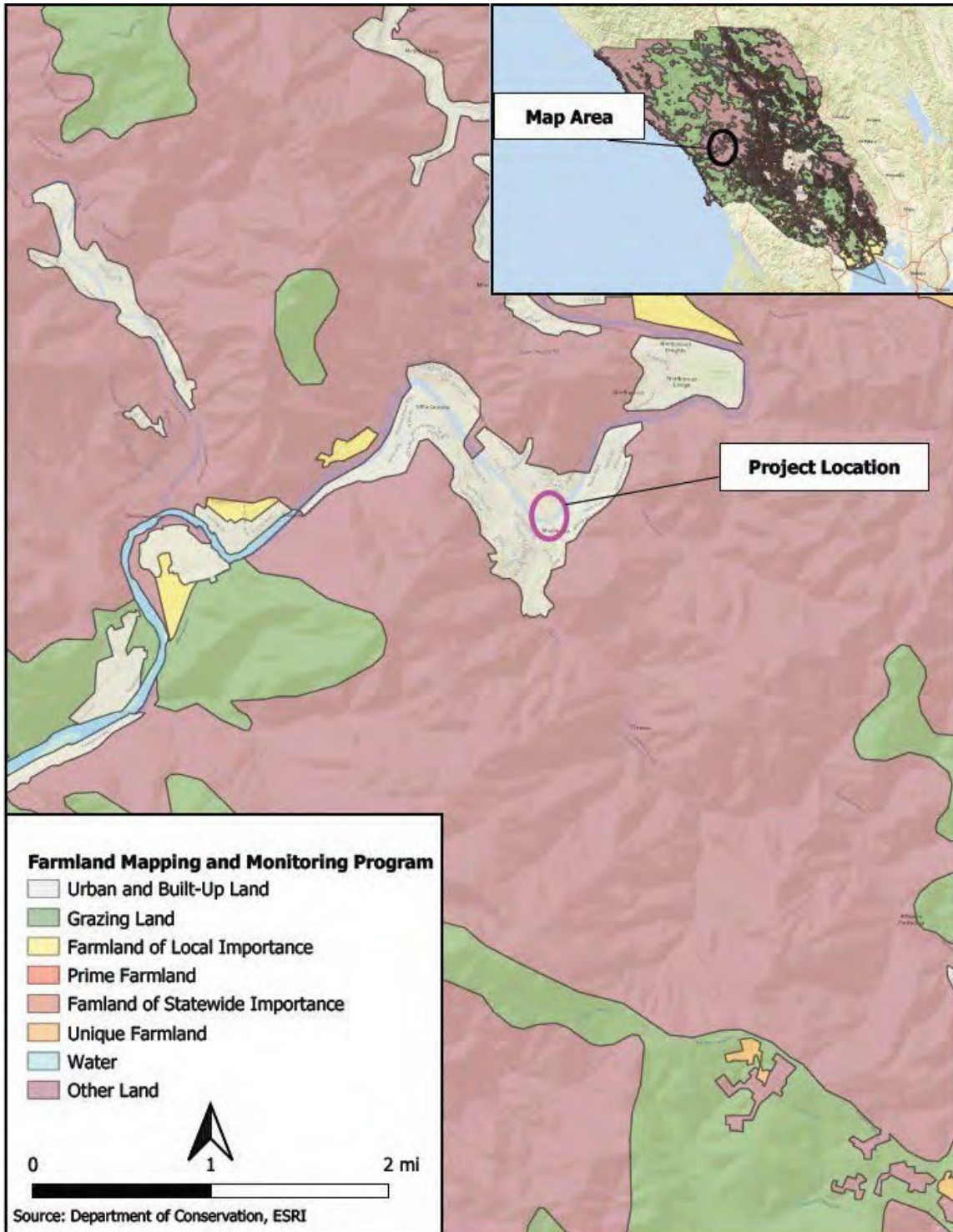


Table 4.2-2 Sonoma County Farmland Mapping and Monitoring Program Distribution

| FMMP Type | Acres | Portion of Total County Land Area |
|---|---------------------|-----------------------------------|
| Prime Farmland | 29,856.56 | 2.9% |
| Farmland of Statewide Importance | 17,482.12 | 1.7% |
| Farmland of Local Importance | 79,913.90 | 7.8% |
| Unique Farmland | 34,042.05 | 3.3% |
| Grazing Land | 415,429.16 | 40.5% |
| Developed and Other Lands | 449,364.98 | 43.7% |
| Total County Land Area | 1,026,090.76 | 100.0%* |
| Total Mapped Farmlands of Importance | 576,723.76 | 56.2% |

Source: County of Sonoma 2020

* Total may not add due to rounding.

The FMMP survey also identifies urban and built-up lands, other land, and water, described as follows.

1. **Urban and Built-up Land.** Urban and built-up land is land occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.
2. **Other Land.** Other land includes low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural land surrounded by urban development and greater than 40 acres is also mapped as Other Land.
3. **Water.** Water is a category encompassing perennial water bodies with an extent of at least 40 acres.

Farmland in the Project region is classified in the immediate vicinity as Urban and Built-up Land and Other Land in the hills above Monte Rio. Urban development and the creation of small residential lots in areas normally dedicated to agricultural production threatens to reduce the amount of productive agricultural land in the county. When development extends into areas previously used for farmland, it often results in permanent conversion of agricultural land and reduction of agricultural production. In Sonoma County, conversion has a noteworthy impact when it reduces the capacity for agriculture to contribute the county’s economy. As part of the FMMP, maps are updated every two years to provide land use conversion information for decision-makers to use when planning for the present and future of California’s agricultural land resources. The latest inventory concluded that over three thousand acres of agricultural land were converted between 2016 and 2018. Table 4.2-3 shows the area lost or gained in each land use category. As shown in Table 4.2-3, the net loss of agricultural land was 85 acres between 2016 and 2018.

Table 4.2-3 Sonoma County Farmlands Change by Land Use Category from 2016-2018

| Land Use Category | Total Acres Lost | Total Acres Gained | Net Change |
|------------------------------------|------------------|--------------------|------------|
| Prime Farmland | -195 | 675 | 480 |
| Farmland of Statewide Importance | -332 | 631 | 299 |
| Unique Farmland | -181 | 595 | 414 |
| Farmland of Local Importance | -1,571 | 894 | -677 |
| Important Farmland Subtotal | -2,279 | 2,795 | 516 |
| Grazing Land | -1,021 | 590 | -41 |
| Agricultural Land Subtotal | -3,300 | 3,385 | 85 |
| Urban and Built-up Land | -377 | 709 | 332 |
| Other Land | -721 | 787 | 66 |
| Water Area | -504 | 21 | -483 |
| Total Area Inventoried | -4,902 | 4,902 | 0 |

Source: DOC 2018

Timber Resources

Most of the timberland resources in Sonoma County are concentrated in the western or coastal area and are therefore addressed in the County’s Local Coastal Program (County of Sonoma 2001). Forests provide commercial timber as a renewable resource in Sonoma County, and form a part of the local economy. They also contribute to the scenic quality and sense of place that make Sonoma County an important tourist destination (see Section 4.1, *Aesthetics*). In 2020, 11.3 million board-feet of lumber was harvested in Sonoma County, valued at roughly 4.5 million dollars. This represents a 54 percent decrease in value of timber immediately before cutting over that harvested in 2019 (County of Sonoma 2021).

Timberland Conversion

Timberland is not included in the farmland mapping programs, and the County has different land use policies for agriculture and timber-producing lands. Converting timberland to an agricultural use is distinct from agricultural crop rotation, as once the effort and expense is made to convert timberland to cropland, it is seldom converted back. Most recent timberland-to-agriculture conversion requests were to accommodate vineyards (County of Sonoma 2006). There will be no timberland converted as a result of the Project.

4.2.2 Regulatory Setting

a. Federal Regulations

Federal Farmland Protection Act

The Farmland Protection Policy Act (FPPA) is intended to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. It ensures that, to the extent practicable, federal programs are compatible with state and local governments, and private programs and policies that protect farmland. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use

and are reviewed by a federal agency or with assistance from a federal agency. Under FPPA, farmland includes Prime Farmland, Land of Statewide or Local Importance, and Unique Farmland. Farmland subject to FPPA requirements does not have to be currently used for crop production, but can be forest land, pastureland, cropland, or other land but does not include water bodies or land developed for urban land uses (i.e., residential, commercial, or industrial uses).

The Natural Resource Conservation Service administers the Farmland Protection Program and uses a land evaluation and site assessment system to establish a farmland conversion impact rating score on proposed sites of federally funded or assisted projects. This score is an indicator for the project sponsor to consider alternative sites if the potential adverse impacts on the farmland exceed the recommended allowable level.

Farm Bill Conservation Programs

The Food, Conservation, and Energy Act of 2008 (the 2008 Farm Bill) designated funding for Natural Resource Conservation Service farmland conservation programs, including the Farm and Ranch Lands Protection Program, Wetland Reserve Program, Grassland Reserve Program, Conservation of Private Grazing Land Program, Conservation Reserve Program, Conservation Stewardship Program, Environmental Quality Incentives Program, Agricultural Water Enhancement Program, and Wildlife Habitat Incentives Program.

U.S. Department of Agriculture, U.S. Forest Service

The U.S. Department of Agriculture, U.S. Forest Service is a federal agency that manages public lands in national forests and grasslands. The U.S. Forest Service provides technical and financial assistance to state and private agencies whose purpose it is to sustain the health, diversity, and productivity of the nation's forests and grasslands to meet the needs of present and future generations.

b. State Regulations

Farmland Mapping and Monitoring Program

Under the Division of Land Resource Protection, the DOC developed the FMMP to monitor the conversion of farmland to and from agricultural use in California. Data is collected at the county level to produce a series of maps identifying eight land use classifications. The program produces a biannual report on the amount of land converted from agricultural to non-agricultural use. The program produces maps and statistical data used for analyzing impacts on California's agricultural resources. Agricultural land is rated according to soil quality and irrigation status, with the best quality land being called Prime Farmland, following the federal classifications described above (DOC 2019).

Williamson Act

The Williamson Act, also known as the California Land Conservation Act of 1965, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use through a tax incentive model. The intent of the program is to preserve actively productive agricultural lands by discouraging their premature and unnecessary conversion to urban uses. In return, landowners receive property tax assessments that are much lower than normal because they are based upon farming and open space uses as opposed to full market value. Landowners may apply to contract with the County to voluntarily

restrict their land to agricultural and compatible uses. Restrictions are enforced through a rolling 10-year term contract. Unless the landowner or the County files a notice of nonrenewal, the 10-year contract is automatically renewed at the beginning of each year. In return for the voluntary restriction, contracted parcels are assessed for property tax purposes at a rate consistent with their actual (agricultural) use, rather than potential market value. The Sonoma County Board of Supervisors has adopted regulations for administration of the County's Williamson Act program. In return for the voluntary restriction, contracted parcels are assessed for property tax purposes at a rate consistent with their actual (agricultural) use, rather than potential market value. There are no lands in the Project site under Williamson Act contracts that would be impacted by the Project.

Farmland Security Zones

In 1998, the state legislature established the Farmland Security Zone (FSZ) program. FSZs are related to Williamson Act contracts as they are in place to protect farmland from conversion. The key difference is that the FSZ must be designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. FSZ contracts have a minimum 20-year term, during which property owners are offered an incentive of greater property tax reductions over Williamson Act contract tax incentives to encourage conservation of prime farmland. The nonrenewal and cancellation procedures are like those for Williamson Act contracts. There are no FSZs in the Project site that would be impacted by the Project.

Land Evaluation and Site Assessment Model

The DOC also employs a land evaluation and site assessment model that incorporates that of the federal model and adds factors to evaluate a given project's size, the soil resource quality at the Project site, water resource availability, surrounding a soil resource quality, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. These factors are rated, weighted, and combined into a numeric score that provides the basis for determining a project's potential significance relative to agricultural land conversion.

California Timberland Productivity Act

To assure that timber resource lands are available in the future, the California Timberland Productivity Act of 1982 (California Government Code, Section 65302) requires the County to designate timberlands in the General Plan and to establish "Timberland Production" zones where uses are limited to timber production.

Forest Practice Act

The Forest Practice Act of 1973 ensures logging is done in a manner that preserves and protects fish, wildlife, forests, and streams in the state. The California Department of Forestry and Fire Protection (CAL FIRE) implements and enforces this and associated rules that protect these resources.

CAL FIRE ensures that private landowners abide by these laws when harvesting trees. Although there are specific exemptions in some cases, compliance with the Forest Practice Act and Forest Practice Rules adopted by the Board of Forestry apply to all commercial harvesting operations for landowners of small parcels, to ranchers owning hundreds of acres, and large timber companies with thousands of acres. The Timber Harvesting Plan is the environmental review document landowners present to CAL FIRE, and it outlines what will be harvested, how it will be harvested, and the steps that will be taken to prevent damage to the environment.

c. Local Regulations

Agricultural Preserve and Open Space District

The Agricultural Preservation and Open Space District is a special district aimed at protecting agricultural, open space, natural resource, and recreational lands that is funded by a 0.25 percent sales tax.

As of 2020, the Sonoma County Agricultural Preservation and Open Space District has preserved 32,500 acres of agricultural lands via conservation easements throughout the County.

Sonoma County Local Agency Formation Commission (Agricultural Lands Policy)

The Sonoma County Local Agency Formation Commission (LAFCO) is established under the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (Government Code Section 56000, et seq.). The LAFCO's function is to "review and approve with or without amendment, wholly, partially, or conditionally, or disapprove proposals for changes of organization or reorganization, consistent with written policies, procedures, and guidelines adopted by the commission." (Government Code Section 56375). This gives LAFCO exclusive power to consider city incorporations, city annexations, and the creation of or addition to special districts. Sonoma LAFCO's Agricultural Lands Policy requires that, in addition considering the policies in Government Code Section 56377, the Commission shall conform to the following policies in reviewing and approving or disapproving proposals that may result in the conversion of agricultural land to non-agricultural uses:

1. Agricultural significance of the subject territory and adjacent areas relative to other agricultural lands in the region
2. Use of the subject territory and adjacent areas
3. Whether public facilities for proposed development would be a) sized or situated to facilitate conversion of adjacent or nearby agricultural land, or b) extended through agricultural lands that lie between the Project site and existing facilities
4. Whether uses incompatible with adjacent agricultural uses are expected to result from the proposal and whether natural or man-made barriers would buffer adjacent or nearby agricultural lands from the effects of proposed development or other incompatible uses
5. Whether the subject territory is located within the sphere of influence of a city or district providing sewer and/or water service or in an "Urban Service Area" designation of the Sonoma County General Plan
6. Provisions of applicable general plan open space and land use elements, growth management policies, or other statutory provisions designed to protect agriculture

The Sonoma County LAFCO is mandated to discourage development that would likely convert to urban uses those lands identified by the County General Plan as suitable for long-term agricultural or open space use or identified by the Sonoma County Agricultural Preservation and Open Space District Acquisition Plan as a priority for acquisition or protection in cooperation with willing landowners (Sonoma LAFCO 2013).

Sonoma County General Plan

The Sonoma County General Plan Agricultural Resources Element promotes and protects local agriculture and forestry. The Agricultural Resources Element defines agriculture as an industry that produces and processes food, fiber, and plant materials, or includes the raising and maintaining of farm animals. The element establishes policies to ensure the stability and productivity of the County's agricultural lands and industries and provides guidelines for decisions in agricultural areas. Goals, objectives, and policies that apply to the proposed Project are as follows.

Goal AR-2: Maintain for the timeframe of this [General Plan] agricultural production on farmlands at the edges but beyond the Urban Service Areas, to minimize the influence of speculative land transactions on the price of farmland and to provide incentives for long term agricultural use.

Objective AR-2.1: Limit intrusion of urban development into agricultural areas.

Objective AR-2.2: Maintain the Urban Service Boundaries to protect agricultural lands at the urban fringe for continued agricultural production.

Objective AR-2.3: Limit extension of urban services such as sewer beyond the Urban Service Boundaries.

Objective AR-2.4: Reduce economic pressure for conversion of agricultural land to non-agricultural use.

Policy AR-2a: Apply agricultural land use categories based on the capability of the land to produce agricultural products. Unless allowed by the Public Facilities and Services Element, limit extension of sewer service to these lands except by out-of-district agreement to solve a health and safety problem.

Policy AR-2b: Prepare a written report to the Local Agency Formation Commission (LAFCO) regarding the consistency with the General Plan of any proposed changes in the sphere of influence or other urban boundaries for governmental entities that provide water or sewer services.

Policy AR-2c: Encourage LAFCO to consider the impacts of annexations on nearby agricultural lands, and to avoid expansion of spheres of influence or annexations onto agricultural lands outside of the designated Urban Service Areas.

Policy AR-2d: Use voluntary purchase or voluntary transfer of development rights programs to limit intrusion of residential development into agricultural lands. If these programs are used, amendments of the Land Use Map or rezoning shall not be used to lower density in anticipation of conferring transfer or purchase rights.

Sonoma County Zoning Code

Sonoma County Zoning Regulations include three agricultural use categories: Land Intensive Agriculture (LIA), Land Extensive Agriculture (LEA), and Diverse Agriculture (DA) (Sonoma County Code Chapter 26, Article 6.). Each category permits the full range of agricultural uses. The categories differ primarily in the types and intensities of agricultural support services, visitor-serving uses, and residential densities. In addition, the County also has an Agriculture and Residential District (AR) which allows for raising of crops and farm animals in areas designated primarily for rural residential uses. The County's Timberland Production (TP) Zone identifies land consistent with the Timberland Productivity Act. Most timberland and forest land not zoned TP is zoned Resources and Rural Development (RRD), which allows land management for commercial production, and timber

management for noncommercial purposes including harvesting and incidental milling, subject to the requirements of CAL FIRE.

Right to Farm Ordinance (Sonoma County Code Chapter 30, Article II)

Sonoma County's Right to Farm ordinance was originally adopted in 1988 and revised in 1999 to include stronger disclosure requirements. The basic intention of the ordinance is to provide public policy support for maintaining the viability of agriculture in Sonoma County. Two of the major features of the Right to Farm ordinance are the farmers' right to conduct agricultural operations, and that legal, properly conducted agricultural operations will not be considered a nuisance. The protections afforded by the ordinance apply only to agricultural operations on land designated as LIA, LEA, or DA (Sonoma County Code Chapter 30, Article II).

Vineyard & Orchard Development and Agricultural Grading and Draining (VESCO)

Sonoma County's VESCO ordinance (codified as Sonoma County Code Chapter 36) regulates new vineyard and orchard development, vineyard and orchard replanting, agricultural grading and draining within the unincorporated county. It sets ministerial standards for specific activities related to erosion, draining, and protection of water resources. VESCO is designed to protect water quality and conserve soil through the use of riparian setbacks, maximum slope allowed for vineyard planting, and other requirements (Sonoma County Code Chapter 36, as amended by Ord. No. 6331, Exhibit A, December 15, 2020).

Agricultural Setbacks

The County Zoning Code establishes agricultural setbacks that provide a buffer between agricultural operations on lands designated agricultural in the existing General Plan and adjacent non-agricultural land uses. Generally, the buffer is defined as a physical separation of 100 to 200 feet on the development side (Sonoma County Code Section 26-88-040(f)).

4.2.3 Impact Analysis

a. Methodology and Significance Thresholds

Agricultural impacts were evaluated based upon review of DOC farmland classifications, regulatory requirements that apply to the various agricultural lands within the county, and the potential of future development to create an agricultural/urban interface. For analysis purposes, "important farmlands" include the following DOC classifications: Prime Farmland, Farmland of Statewide Importance, and Unique Farmland. Significance criteria found in *CEQA Guidelines* Appendix G provide the means to identify where potentially significant impacts might occur. Impacts to agriculture and forestry resources would be significant if implementation of the Project would:

- 1) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to nonagricultural use
- 2) Conflict with existing zoning for agricultural use, or a Williamson Act contract
- 3) Conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production
- 4) Result in the loss of forest land or conversion of forest land to non-forest use

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

b. Project Impacts and Mitigation Measures

Threshold: Would the Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Threshold: Would the Project conflict with existing zoning for agricultural use or a Williamson Act contract?

Impact AG-1 THE PROJECT DOES NOT OCCUR ON LAND DESIGNATED AS PRIME FARMLAND, UNIQUE FARMLAND, OR FARMLAND OF STATEWIDE IMPORTANCE. THEREFORE, THE PROJECT WOULD NOT CONVERT THESE TYPES OF LANDS TO NON-AGRICULTURAL USE. NONE OF THE LANDS ARE UNDER WILLIAMSON ACT CONTRACT AND THUS, THESE LANDS UNDER THIS PROTECTION WOULD NOT BE CONVERTED TO NON-AGRICULTURAL USE. NO IMPACT WOULD OCCUR.

There is no farmland present within the Project's boundaries and the Project would not convert any farmland to non-agricultural use. The land immediately surrounding the bridge is classified as either water or Urban and Built-Up Land. The hills above Monte Rio are classified as Other Land.

Furthermore, none of these sites are under Williamson Act contracts and thus the protections that program affords valuable agricultural lands would not be violated by the Project. There would be no impact.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

No impact would occur, and mitigation is not required.

Threshold: Would the Project result in the loss of forest land or conversion of forest land to non-forest use?

Threshold: Would the Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

Impact AG-2 THE PROJECT SITE IS NOT SITUATED IN AREAS ZONED FOR TIMBERLAND PRODUCTION (TPZ) AND, THEREFORE, THE PROJECT WOULD NOT CONFLICT WITH EXISTING ZONING FOR, OR CAUSE REZONING OF, FORESTLAND, TIMBERLAND, OR TIMBERLAND ZONED TIMBERLAND PRODUCTION. THE PROJECT WOULD NOT RESULT IN THE LOSS OF FOREST LAND OR CONVERSION OF FOREST LAND TO NON-FOREST USE. THERE WOULD BE NO IMPACT.

The Project site does not include existing zoning for timberland, forest land, or timberland zoned Timberland Production. The Project site is not zoned TP or RRD, nor are lands adjacent to the

Potential Sites zoned TP. TP and RRD encompass most forest land as defined in Public Resources Code Section 12220(g) and timberland as defined by Public Resources Code Section 4526 that is not in a TP zone. Accordingly, the Project would not conflict with existing zoning for, or cause rezoning of, land zoned as forest land, timberland, or Timberland Production. Therefore, no impact would occur.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

No impacts would occur, and mitigation is not required.

Threshold: Would the Project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

Impact AG-3 THE PROJECT WOULD NOT RESULT IN CHANGES IN THE EXISTING ENVIRONMENT WHICH, DUE TO THEIR LOCATION OR NATURE, COULD RESULT IN CONVERSION OF FARMLAND TO NON-AGRICULTURAL USE OR CONVERSION OF FOREST LAND TO NON-FOREST USE. THERE WOULD BE NO IMPACT.

There is no farmland or forest land that would be converted to non-agricultural or non-forest use adjacent to the Project site as a result of project activities.

Mitigation Measure

No mitigation measures would be required.

Significance After Mitigation

No impacts would occur, and mitigation is not required.

4.2.4 Cumulative Impacts

A project's environmental impacts are "cumulatively considerable" if the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (*CEQA Guidelines* Section 15065[a][3]). The geographic scope for cumulative agricultural and forest resource impacts are limited to the Project site. Adjacent properties are zoned for either Rural Residential, Limited/ Neighborhood Commercial, Recreation, or Public Facilities that are developed lands that do not support agriculture or forestry uses. As indicated in section 4.2.3, the Project will have no impacts to agricultural and forestry resources. The replacement bridge will serve the same purpose as the existing bridge, and not result in incremental effects that could be considered cumulative impacts to agricultural or forestry resources. Therefore, the Project will not have cumulatively considerable impacts to agricultural and forestry resources.

This page intentionally left blank.

Air Quality Table of Contents

| | | |
|-------|--------------------------|--------|
| 4.3 | Air Quality | 4.3-1 |
| 4.3.1 | Setting..... | 4.3-1 |
| 4.3.2 | Regulatory Setting | 4.3-5 |
| 4.3.3 | Impact Analysis | 4.3-8 |
| 4.3.4 | Cumulative Impacts | 4.3-15 |

Tables

| | | |
|-------------|---|--------|
| Table 4.3-1 | Federal and State Ambient Air Quality Standards | 4.3-2 |
| Table 4.3-2 | Ambient Air Quality at Sonoma County Monitoring Stations..... | 4.3-5 |
| Table 4.3-3 | BAAQMD Criteria Air Pollutant Significance Thresholds | 4.3-10 |
| Table 4.3-4 | BAAQMD Odor Source Thresholds | 4.3-11 |
| Table 4.3-5 | BHB Reconstruction Construction Period Emissions..... | 4.3-13 |

4.3 Air Quality

This section analyzes the potential air quality impacts associated with construction and operation of the Project, including from conflicts with applicable air quality plans, exceedance of air quality standards from criteria pollutant emissions, exposure of sensitive receptors to substantial pollutant concentrations, and odor emissions. The analysis in this section is based in part on modeling using the California Emissions Estimator Model (CalEEMod); modeling outputs are available upon request at Sonoma County PRMD offices.

4.3.1 Setting

a. Existing Air Quality Setting

Local Climate and Meteorology

Sonoma County is geographically located within the boundaries of two Regional Air Quality Management Districts. The southern portion of Sonoma County (from approximately Windsor to the southern County border) is in the San Francisco Bay Area Air Basin (SFBAAB), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The northern portion of Sonoma County (from approximately north of Windsor to the northern County border) is in the North Coast Air Basin (NCAB), is under the jurisdiction of the Northern Sonoma County Air Pollution Control District (NSCAPCD). The Bohemian Highway Bridge is located in the NCAB and under the jurisdiction of the NSCAPCD. Air quality in these basins are affected by the region's emission sources and by natural factors. Topography, wind speed and direction, and air temperature gradient all influence air quality. The basins are affected by a Mediterranean climate, with warm, dry summers and cool, damp winters.

Stationary and mobile sources generate air pollutant emissions in the basins. Stationary sources can be divided into two major subcategories: point and area sources. Point sources occur at a specific location and are often identified by an exhaust vent or stack. Examples include boilers or combustion equipment that produce electricity or generate heat. Area sources are widely distributed and are generated by residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, landfills, and some consumer products, among other things. Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. On-road sources may be legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, and construction equipment. Air pollutants can also be generated by the natural environment, such as when high winds suspend fine dust particles.

The NCAB has lower pollutant concentrations compared to the neighboring SFBAAB and typically good air quality due to its lower population density, proximity to the coast, and large mountain ranges.

Air Quality Standards

The federal and state governments have established ambient air quality standards for the protection of public health. The United States Environmental Protection Agency (USEPA) is the federal agency designated to administer air quality regulation, while the California Air Resources Board (CARB) is the state equivalent agency. CARB is a part of the California Environmental

Protection Agency (CalEPA). The BAAQMD and NCSAPCD provide local management of air quality in the County. CARB has established air quality standards and is responsible for the control of mobile emission sources, while the BAAQMD and NCSAPCD are responsible for enforcing standards and regulating stationary sources.

The USEPA has set primary national ambient air quality standards (NAAQS) for ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter with an aerodynamic diameter equal to or less than 10 microns (PM₁₀), fine particulate matter with an aerodynamic diameter equal to or less than 2.5 microns (PM_{2.5}), and lead. Primary standards are those levels of air quality deemed necessary, with an adequate margin of safety, to protect public health. In addition, California has established health-based ambient air quality standards for these and other pollutants, some of which are more stringent than the federal standards. Table 4.3-1 lists the current federal and state standards for regulated pollutants.

Table 4.3-1 Federal and State Ambient Air Quality Standards

| Pollutant | Averaging Time | Federal Primary Standards | California Standard |
|-------------------|-----------------|---------------------------|-----------------------|
| Ozone | 1-Hour | – | 0.09 ppm |
| | 8-Hour | 0.070 ppm | 0.070 ppm |
| Carbon Monoxide | 8-Hour | 9.0 ppm | 9.0 ppm |
| | 1-Hour | 35.0 ppm | 20.0 ppm |
| Nitrogen Dioxide | Annual | 0.053 ppm | 0.030 ppm |
| | 1-Hour | 0.100 ppm | 0.18 ppm |
| Sulfur Dioxide | Annual | – | – |
| | 24-Hour | – | 0.04 ppm |
| | 1-Hour | 0.075 ppm | 0.25 ppm |
| PM ₁₀ | Annual | – | 20 µg/m ³ |
| | 24-Hour | 150 µg/m ³ | 50 µg/m ³ |
| PM _{2.5} | Annual | 12 µg/m ³ | 12 µg/m ³ |
| | 24-Hour | 35 µg/m ³ | – |
| Lead | 30-Day Average | – | 1.5 µg/m ³ |
| | 3-Month Average | 0.15 µg/m ³ | – |

ppm = parts per million

µg/m³ = micrograms per cubic meter

Source: CARB 2016

As local air quality management agencies, the BAAQMD and NSCAPCD must monitor air pollutant levels to ensure that state and federal air quality standards are met and, if they are not met, to develop strategies to meet them. Depending on whether standards are met or exceeded, a local air basin is classified as in “attainment” or “non-attainment”. The NCAB is in attainment for all standards.

Air Quality Pollutants of Primary Concern

The federal and state clean air acts mandate the control and reduction of certain air pollutants. Under these laws, USEPA and CARB have established ambient air quality standards for certain criteria pollutants. Ambient air pollutant concentrations are affected by the rates and distributions of corresponding air pollutant emissions, and by the climate and topographic influences discussed

above. Proximity to major sources is the primary determinant of concentrations of non-reactive pollutants, such as CO and suspended particulate matter. Ambient CO levels usually follow the spatial and temporal distributions of vehicular traffic. A discussion of each primary criterion pollutant is provided below.

Ozone

Ozone is produced by a photochemical reaction (i.e., triggered by sunlight) between nitrogen oxides (NO_x) and reactive organic gases (ROG).¹ NO_x is formed during the combustion of fuels, while ROG is formed during combustion and evaporation of organic solvents. Because ozone requires sunlight to form, it mostly occurs in substantial concentrations between the months of April and October. Ozone is a pungent, colorless, toxic gas with direct health effects on humans including respiratory and eye irritation and possible changes in lung functions. Groups most sensitive to ozone include children, the elderly, people with respiratory disorders, and people who exercise strenuously outdoors.

Carbon Monoxide

CO is an odorless, colorless gas and causes health problems such as fatigue, headache, confusion, and dizziness. The incomplete combustion of petroleum fuels by on-road vehicles and at power plants is a major cause of CO, which is also produced during the winter from wood stoves and fireplaces. CO tends to dissipate rapidly into the atmosphere; consequently, violations of the state CO standards are associated generally with major roadway intersections during peak-hour traffic conditions.

Localized CO “hotspots” can occur at intersections with heavy peak-hour traffic. Specifically, hotspots can be created at intersections where traffic levels are sufficiently high that the local CO concentration exceeds the NAAQS of 35.0 ppm or the CAAQS of 20.0 ppm.

Nitrogen Dioxide

NO₂ is a by-product of fuel combustion, with the primary source being motor vehicles and industrial boilers and furnaces. Nitric oxide is the principal form of nitrogen oxide produced by combustion, but nitric oxide reacts rapidly to form NO₂, creating the mixture of NO and NO₂ commonly called NO_x. Nitrogen dioxide is an acute irritant. A relationship between NO₂ and chronic pulmonary fibrosis may exist, and an increase in bronchitis may occur in young children at concentrations below 0.3 ppm. Nitrogen dioxide absorbs blue light and causes a reddish-brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of PM₁₀ and acid rain.

Suspended Particulate Matter

PM₁₀ is particulate matter measuring no more than 10 microns in diameter; PM_{2.5} is fine particulate matter measuring no more than 2.5 microns in diameter. Suspended particulates are mostly dust particles, nitrates, and sulfates. Both PM₁₀ and PM_{2.5} are by-products of fuel combustion and wind erosion of soil and unpaved roads and are directly emitted into the atmosphere through these

¹ CARB defines VOC and ROG similarly as, “any compound of carbon excluding CO, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate,” with the exception that VOC are compounds that participate in atmospheric photochemical reactions (CARB 2009). For the purposes of this analysis, ROG and VOC are considered comparable in terms of mass emissions and the term ROG is used in this report.[1] CARB defines VOC and ROG similarly as, “any compound of carbon excluding CO, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate,” with the exception that VOC are compounds that participate in atmospheric photochemical reactions (CARB 2009). For the purposes of this analysis, ROG and VOC are considered comparable in terms of mass emissions and the term ROG is used in this report.

processes. Suspended particulates are also created in the atmosphere through chemical reactions. The characteristics, sources, and potential health effects associated with the small particulates (those between 2.5 and 10 microns in diameter) and fine particulates (those 2.5 microns and below) can be very different.

The small particulates generally come from windblown dust and dust kicked up by mobile sources. The fine particulates are generally associated with combustion processes, and form in the atmosphere as a secondary pollutant through chemical reactions. Fine particulate matter is more likely to penetrate deeply into the lungs and poses a health threat to all groups, but particularly to the elderly, children, and those with respiratory problems. More than half of the small and fine particulate matter inhaled into the lungs remains there. These materials can damage health by interfering with the body's mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance.

Toxic Air Contaminants

The California Health and Safety Code defines a toxic air contaminant (TAC) as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." Most of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being diesel particulate matter (DPM) from diesel-fueled engines. According to CARB, diesel engine emissions are believed to be responsible for about 70 percent of California's estimated known cancer risk attributable to TACs and they make up about 8 percent of outdoor PM_{2.5} (CARB 2020a).

Lead

Lead is a metal found in the environment and in manufacturing products. Historically, the major sources of lead emissions have been mobile and industrial sources. In the early 1970s, the USEPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The USEPA completed the ban prohibiting the use of leaded gasoline in highway vehicles in December 1995. As a result of the USEPA's regulatory efforts to remove lead from gasoline, atmospheric lead concentrations have declined substantially over the past several decades. The most dramatic reductions in lead emissions occurred prior to 1990 due to the removal of lead from gasoline sold for most highway vehicles. Because of phasing out leaded gasoline, metal processing is now the primary source of lead emissions. The highest level of lead in the air is found generally near lead smelters. Other stationary sources include waste incinerators, utilities, and lead-acid battery manufacturers.

Current Air Quality

There are two air quality monitoring stations currently in operation in Sonoma County: the Healdsburg-Municipal Airport station, located in the NSCAPCD, and the Sebastopol-103 Morris Street station, located in the BAAQMD. The Healdsburg-Municipal Airport station only monitors ozone; the Sebastopol-103 Morris Street station monitors ozone, particulate matter, and NO₂. Table 4.3-2 indicates the number of days that each of the air quality standards have been exceeded at the stations during the monitoring period from 2016 through 2018.

Table 4.3-2 Ambient Air Quality at Sonoma County Monitoring Stations

| Pollutant | 2016 | 2017 | 2018 |
|---|-------|-------|-------|
| Sebastopol-103 Morris Street Station | | | |
| 8-Hour Ozone (ppm), maximum | 0.064 | 0.071 | 0.053 |
| Number of days of State exceedances (>0.070) | 0 | 1 | 0 |
| Number of days of federal exceedances (>0.070) | 0 | 1 | 0 |
| 1-hour ozone (ppm), maximum | 0.073 | 0.087 | 0.071 |
| Number of days of State exceedances (>0.09 ppm) | 0 | 0 | 0 |
| Number of days of federal exceedances (>0.112 ppm) | 0 | 0 | 0 |
| Nitrogen dioxide (ppb) - 1-Hour Maximum | 31.8 | 34.5 | 65.1 |
| Number of days of State exceedances (>0.18 ppm) | 0 | 0 | 0 |
| Number of days of federal exceedances (0.10 ppm) | 0 | 0 | 0 |
| Particulate matter <2.5 microns, $\mu\text{g}/\text{m}^3$, 24-hour maximum | 18.7 | 81.8 | 175.3 |
| Number of days above federal standard (>35 $\mu\text{g}/\text{m}^3$) | 0 | 4 | 13 |
| Healdsburg-Municipal Airport Station | | | |
| 8-hour ozone (ppm), 8-hour maximum | 0.066 | 0.069 | 0.061 |
| Number of days of State exceedances (>0.070) | 0 | 0 | 0 |
| Number of days of federal exceedances (>0.070) | 0 | 0 | 0 |
| Ozone (ppm), 1-hour maximum | 0.072 | 0.083 | 0.075 |
| Number of days of State exceedances (>0.09 ppm) | 0 | 0 | 0 |
| Number of days of federal exceedances (>0.112 ppm) | 0 | 0 | 0 |

Source: CARB 2020b

Sensitive Receptors

Ambient air quality standards have been established to represent the levels of air quality considered sufficient to protect public health and welfare, with a margin of safety. They are designed to protect that segment of the public most susceptible to respiratory distress, such as children under 14, the elderly over 65, persons engaged in strenuous work or exercise, and people with cardiovascular and chronic respiratory diseases. Therefore, most of the sensitive receptor locations are schools, hospitals, senior living centers, and residences.

4.3.2 Regulatory Setting

a. Federal Regulations

Federal Clean Air Act

The USEPA is charged with implementing national air quality programs. USEPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA), passed in 1963 by the U.S. Congress and amended several times. The 1970 federal CAA amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including non-attainment requirements for areas not meeting NAAQS and the Prevention of Significant Deterioration program. The 1990 federal CAA amendments represent the latest in a series of federal efforts to regulate air quality in the United States.

National Ambient Air Quality Standards

The federal CAA requires USEPA to establish primary and secondary NAAQS for several criteria air pollutants. The air pollutants for which standards have been established are considered the most prevalent air pollutants known to be hazardous to human health. NAAQS have been established for ozone, CO, NO₂, SO₂, PM₁₀, PM_{2.5}, and Pb.

b. State Regulations

California Clean Air Act

The California Clean Air Act (CAA), signed into law in 1988, requires all areas of the state to achieve and maintain the CAAQS by the earliest practical date. CARB is the state air pollution control agency and is a part of CalEPA. CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California, and for implementing the requirements of the California CAA. CARB oversees local district compliance with federal and California laws, approves local air quality plans, submits the state implementation plans to the USEPA, monitors air quality, determines and updates area designations and maps, and sets emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

California Ambient Air Quality Standards

The California CAA requires CARB to establish ambient air quality standards for California, known as CAAQS. Similar to the NAAQS, CAAQS have been established for criteria pollutants and standards are established for vinyl chloride, hydrogen sulfide, sulfates, and visibility-reducing particulates. In general, the CAAQS are more stringent than the NAAQS on criteria pollutants. The California CAA requires all local air districts to endeavor to achieve and maintain the CAAQS by the earliest practical date. The California CAA specifies that local air districts focus attention on reducing the emissions from transportation and area-wide emission sources and provides districts with the authority to regulate indirect sources.

c. Local Regulations

Bay Area Air Quality Management District

The BAAQMD is the agency primarily responsible for assuring national and State ambient air quality standards are attained and maintained in the SFBAAB. The BAAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, and conducting public education campaigns, as well as many other activities. The BAAQMD has jurisdiction over much of the nine-county Bay Area, including the southern portion of Sonoma County. Although the BAAQMD does not have jurisdiction in the NCAB portion of the County, as indicated below, this document relies on BAAQMD's thresholds for the criteria pollutant and odor impact analysis.

Northern Sonoma County Air Pollution Control District

NSCAPCD is the agency primarily responsible for attaining and maintaining the NAAQS and CAAQS in the NCAB portion of the County. NSCAPCD is responsible for adopting and enforcing rules and

regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, and monitoring ambient air quality and meteorological conditions. NCAB is in attainment for all federal ambient air quality standards, and, as such, the NSCAPCD is not required to prepare or implement an air quality plan.

Specific NSCAPCD rules applicable to the Project would include:

1. **Rule 400 – General Limitations.** The general limitations rule ensures that a person may not create a public nuisance by discharging quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property. NSCAPCD has established a nuisance rule to address odor issues. Rule 400 states that air contaminants will not be discharged in quantities sufficient to constitute a public nuisance to any considerable number of persons or the public or that would endanger the comfort or repose of any person or the public. Odors would be considered a nuisance by NSCAPCD if a complaint is received from a significant number of people and the odor issue is verified upon inspection.
2. **Rule 410 – Visible Emissions.** The visible emissions rule ensures that a person may not create a public nuisance by discharging into the atmosphere from any source whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated as No. 2 on the Ringlemann Chart, as published by the United States Bureau of Mines or of such opacity as to obscure an observer's view to a degree equal to or greater than Ringlemann 2 or 40 percent opacity.
3. **Rule 420 – Particulate Matter.** The particulate matter rule ensures that no person may discharge particulate matter into the atmosphere causing a public nuisance or causing an exceedance of State or national ambient air quality standards. Various emission limits are defined in the rule governing particulate emissions from different sectors of industry.
4. **Rule 430 – Fugitive Dust Emissions.** The fugitive dust rule ensures that the handling, transporting, or open storage of materials in such a manner which allows or may allow unnecessary amounts of particulate matter to become airborne, shall not be permitted. The rule also defines a set of reasonable precautions designed to aid in preventing violation the rule.
 - a. **Regulation II – Open Burning.** This regulation prohibits the use of open outdoor fires within the Basin with certain exemptions as outlined in the regulation.
 - b. **Regulation IV – Control Measure for Wood-Fired Appliance Emissions.** This regulation is intended to limit and/or reduce particulate emissions caused by the use of wood-fired appliances, which must be EPA or District certified, and emit less than or equal to 7.5 grams particulate per hour for a non-catalytic, wood-fired appliance or 4.1 grams per hour for a catalytic wood fired appliance.

Sonoma County General Plan 2020

Section 8 of the Open Space and Resource Conservation Element of the Sonoma County General Plan 2020 contains air pollution goals, objectives, and policies for the County, including:

Goal OSRC-16: Preserve and maintain good air quality and provide for an air quality standard that will protect human health and preclude crop, plant, and property damage in accordance with the requirements of the Federal and State Clean Air Acts.

Objective OSRC-16.1: Minimize air pollution and greenhouse gas emissions.

Objective OSRC-16.2: Encourage reduced motor vehicle use as a means of reducing resultant air pollution. The following policies, in addition to those of the Circulation and Transit Element, shall be used to achieve these objectives:

Policy OSRC-16a: Require that development projects be designed to minimize air emissions. Reduce direct emissions by utilizing construction techniques that decrease the need for space heating and cooling.

Policy OSRC-16b: Encourage public transit, ridesharing, and van pooling, shortened and combined motor vehicle trips to work and services, use of bicycles, and walking. Minimize single passenger motor vehicle use.

Policy OSRC-16c: Refer projects to the local air quality districts for their review.

Policy OSRC-16f: Encourage the adoption of standards, the development of new technology, and retrofitting to reduce air pollution resulting from geothermal development.

Policy OSRC-16j: Ensure that any proposed new sources of toxic air contaminants or odors provide adequate buffers to protect sensitive receptors and comply with applicable health standards. Promote land use compatibility for new development by using buffering techniques such as landscaping, setbacks, and screening in areas where such land uses abut one another.

Policy OSRC-16j: Require consideration of odor impacts when evaluating discretionary land uses and development projects near wastewater treatment plant or similar uses.

Policy OSRC-16l: Work with the applicable Air Quality districts to adopt a diesel particulate ordinance. The ordinance should prioritize on site over off site mitigation of diesel particulate emissions to protect neighboring sensitive receptors from these emissions.

Policy OSRC-16m: Provide education and outreach to the public regarding the Air Quality Districts' "Spare the Air" Programs.

4.3.3 Impact Analysis

a. Thresholds of Significance

To determine whether a project would result in a significant impact to air quality, Appendix G of the *CEQA Guidelines* requires consideration of whether a project would:

1. Conflict with or obstruct implementation of the applicable air quality plan
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or State ambient air quality standard
3. Expose sensitive receptors to substantial pollutant concentrations
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people

NSCAPCD Significance Thresholds

NSCAPCD has not established numerical standards of significance for emissions from construction or operational activities. In lieu of quantitative standards for projects in the NSCAPCD, the County has determined that using BAAQMD thresholds for the criteria pollutant and odor impact analysis would be most appropriate.

BAAQMD Significance Thresholds

This analysis uses the BAAQMD's May 2017 *CEQA Air Quality Guidelines* to evaluate air quality. The plan-level thresholds specified in the May 2017 BAAQMD *CEQA Air Quality Guidelines* were used to determine whether the proposed project impacts exceed the thresholds identified in *CEQA Guidelines Appendix G*.

Consistency with Air Quality Plan

Under BAAQMD's methodology, a determination of consistency with *CEQA Guidelines* thresholds should demonstrate that a project:

1. Supports the primary goals of the 2017 Clean Air Plan
2. Includes applicable control measures from the 2017 Clean Air Plan
3. Does not disrupt or hinder implementation of any 2017 Clean Air Plan control measures

Short-Term Emissions Thresholds

The BAAQMD's May 2017 *CEQA Air Quality Guidelines* have no plan-level significance thresholds for construction air pollutants emissions. However, they do include project-level screening and emissions thresholds for temporary construction-related emissions of air pollutants. These thresholds represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the SFBAAB's existing air quality conditions and are discussed in detail below (BAAQMD 2017b).

The BAAQMD developed screening criteria in the 2017 *CEQA Air Quality Guidelines* to provide lead agencies and project applicants with a conservative indication of whether a project could result in potentially significant air quality impacts.

If a project meets the screening criteria, then the lead agency or applicant would not need to perform a detailed air quality assessment of their project's air pollutant emissions. These screening levels are generally representative of new development on greenfield sites without any form of mitigation measures taken into consideration (BAAQMD 2017b).

In addition to the screening criteria, several additional factors are outlined in the 2017 *CEQA Air Quality Guidelines* that construction activities must satisfy for a project to meet the construction screening criteria:

1. All basic construction measures from the 2017 CEQA Guidelines must be included in project design and implemented during construction
2. Construction-related activities would not include any of the following:
 - a. Demolition
 - b. Simultaneous occurrence of more than two construction phases (e.g., paving and building construction would occur simultaneously)
 - c. Simultaneous construction of more than one land use type (e.g., project would develop residential and commercial uses on the same site) (not applicable to high density infill development)
 - d. Extensive material transport (e.g., greater than 10,000 cubic yards of soil import/export) requiring a considerable amount of haul truck activity

For projects that do not meet the screening criteria above, the BAAQMD construction significance thresholds for criteria air pollutants are used to evaluate a project’s potential air quality impacts.

Table 4.3-3 BAAQMD Criteria Air Pollutant Significance Thresholds

| Pollutant | Construction Thresholds Average Daily Emissions (lbs/day) | Operational Threshold Average Daily Emissions (lbs/day) | Operational Threshold Maximum Annual Emissions (tons/year) |
|-------------------|--|--|---|
| ROG | 54 | 54 | 10 |
| NO _x | 54 | 54 | 10 |
| PM ₁₀ | 82 (exhaust) | 82 | 15 |
| PM _{2.5} | 54 (exhaust) | 54 | 10 |
| Fugitive Dust | Construction Dust Ordinance or other Best Management Practices | Not Applicable | Not Applicable |

Source: BAAQMD 2017b

For all projects in the SFBAAB, the BAAQMD 2017 *CEQA Air Quality Guidelines* recommends implementation of the Basic Construction Mitigation Measures listed in Table 8-2 of the Guidelines (BAAQMD 2017b).

Long-Term Emissions Thresholds

The BAAQMD’s 2017 *CEQA Air Quality Guidelines* contain specific operational plan-level significance thresholds for criteria air pollutants. Plans must show the following over the planning period:

1. Consistency with current air quality plan control measures
2. Vehicle miles traveled (VMT) or vehicle trips (VT) increase is less than or equal to the plan’s projected population increase

If a plan can demonstrate consistency with both criteria, then impacts are considered less than significant. The current air quality plan is the 2017 Clean Air Plan.

Carbon Monoxide Hotspots

BAAQMD provides a preliminary screening methodology to conservatively determine whether a proposed project would exceed CO thresholds. If the following criteria are met, a project would result in a less than significant impact related to local CO concentrations:

1. The Project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.
2. Project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
3. Project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

Odors

The BAAQMD provides minimum distances for siting of new odor sources shown in Table 4.3-4. A significant impact would occur if the Project would result in other emissions (such as odors)

affecting substantial numbers of people or would site a new odor source as shown in Table 4.3-4 within the specified distances of existing receptors.

Table 4.3-4 BAAQMD Odor Source Thresholds

| Odor Source | Minimum Distance for Less than Significant Odor Impacts |
|-------------------------------|---|
| Wastewater treatment plant | 2 miles |
| Wastewater pumping facilities | 1 mile |
| Sanitary Landfill | 2 miles |
| Transfer Station | 1 mile |
| Composting Facility | 1 mile |
| Petroleum Refinery | 2 miles |
| Asphalt Batch Plant | 2 miles |
| Chemical Manufacturing | 2 miles |
| Fiberglass Manufacturing | 1 mile |
| Painting/Coating Operations | 1 mile |
| Rendering Plant | 2 miles |

Source: BAAQMD 2017b

b. Methodology

Short-Term Emissions

Construction-related emissions are generally short-term in duration but may still cause adverse air quality impacts. Construction of the Project would generate temporary emissions from three primary sources: the operation of construction vehicles (e.g., scrapers, loaders, dump trucks, etc.); ground disturbance during site preparation and grading, which creates fugitive dust; and the application of asphalt, paint, or other oil-based substances.

Daily construction exhaust emissions were estimated using the Sacramento Metropolitan Air Quality Management District Road Construction Emissions Model (RCEM), version 9.0.0. The Bay Area Air Quality Management District (BAAQMD) recommends the use of RCEM to analyze construction emissions for transportation projects. The model predicts emissions of ozone precursor pollutants and particulate matter. The model also computes emissions of greenhouse gases (GHGs) and reports them in metric tons of carbon dioxide equivalent (CO₂e). RCEM uses California Air Resources Board’s OFFROAD database to compute emissions from construction equipment use and the EMFAC2017 on-road motor vehicle emissions estimation model to predict emissions from trucks and worker vehicles. Emissions from demolition activities were estimated using the California Emissions Estimator Model (CalEEMod) version 2020.4.0. CalEEMod computes annual emissions for construction projects that include demolition based on the size of the structure (or tons of debris generated). It provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of demolition equipment emissions, while off-site activity includes worker, hauling, and vendor traffic.

The size of the existing bridge, approximately 37,100 square foot (sf) and anticipated demolition schedule were input into CalEEMod. The demolition scenario, including equipment list and schedule, were based on the information provided by the applicant. The work schedule assumes demolition would start in April 2025, after work on the new bridge is complete, and take

approximately 53 workdays to complete. Like RCEM, the latest version of CalEEMod uses onroad vehicle emissions factors from EMFAC2017 with SAFE Rule adjustment factors applied. CalEEMod estimated 169 haul trips would be associated with the demolition of the existing bridge, based on the estimated square footage.

Long-Term Emissions

The replacement bridge is not expected to result in increased long-term emissions over baseline conditions. There will be no significant expansion of use that would result in increased emissions in the long term.

c. Impact Analysis

Air Quality

| |
|--|
| Threshold: Would the Project conflict with or obstruct implementation of the applicable air quality plan? |
|--|

Impact AQ-1 THE PROJECT WOULD NOT CONFLICT WITH ANY APPLICABLE AIR QUALITY PLAN. THERE WOULD BE NO IMPACT

The Project would not conflict with any applicable air quality plan. The NSCAPCD is in attainment for all pollutants and therefore is not required to develop and does not have an air quality plan; therefore, the Project would not conflict with an air quality plan in the NSCAPCD.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

No impact would occur, and mitigation is not required.

| |
|--|
| Threshold: Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard? |
|--|

Impact AQ-2 THE PROJECT WOULD NOT RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE OF ANY CRITERIA POLLUTANT FOR WHICH THE PROJECT REGION IS NON-ATTAINMENT UNDER AN APPLICABLE FEDERAL OR STATE AMBIENT AIR QUALITY STANDARD. THERE WOULD BE NO IMPACT

The project region is in full attainment under applicable federal and state ambient air quality standards. There would be no impact.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

No impact would occur, and mitigation is not required.

Threshold: Would the Project expose sensitive receptors to substantial pollutant concentrations?

Impact AQ-3 SENSITIVE RECEPTORS MAY BE EXPOSED TO TEMPORARY CONSTRUCTION GENERATED POLLUTANTS. CONSTRUCTION WOULD TEMPORARILY INCREASE AIR POLLUTANT EMISSIONS, POSSIBLY CREATING LOCALIZED AREAS OF UNHEALTHY AIR POLLUTION LEVELS OR AIR QUALITY NUISANCES. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

Sensitive receptors include hospitals, schools, convalescent facilities, and residential areas. The Project site is located within the urban footprint of the community of Monte Rio. Residential areas are located in close proximity to the bridge, and there is a school approximately ¼ mile from the Project site. These receptors may be exposed to construction generated pollutants, however, these impacts will be temporary and last only as long as construction activities occur. Implementation of Mitigation Measure AQ-1 below would reduce this impact to less than significant.

Construction

The BAAQMD 2017 *CEQA Air Quality Guidelines* include project-level thresholds for construction emissions. If a project does not meet BAAQMD construction screening levels (see Table 4.3-3) or the project’s construction emissions exceed the project-level thresholds (see Table 4.3-4), the project’s emissions would be significant and mitigation that would implement the BAAQMD 2017 *CEQA Air Quality Guidelines’* Additional Construction Mitigation Measures would be required.

A Construction Air Pollutant and Greenhouse Gas Emission Analysis was completed in 2021 by Illingworth & Rodkin, Inc. A summary of construction related emissions is included Table 4.3-5 (Illingworth & Rodkin 2021). The construction emission model found that there would be no emissions above the BAAQMD significance thresholds.

Table 4.3-5 BHB Reconstruction Construction Period Emissions

| | ROG | NO _x | PM ₁₀ Exhaust | PM ₂₅ Exhaust | GHG (MT CO ₂ e) |
|---|--------------------|--------------------|-----------------------------|-----------------------------|-------------------------------|
| Construction Emissions (tons) | 0.97 | 8.96 | 0.41 | 0.37 | 1,913 MT |
| Demolition Emissions (tons) | 0.04 | 0.34 | 0.02 | 0.02 | 83 MT |
| Total Emissions (tons) | 1.01 | 9.07 | 0.43 | 0.39 | 1,996 MT |
| Average daily emissions (pounds/day)* | 3.53 | 31.71 | 1.50 | 1.36 | NA |
| <i>BAAQMD Thresholds (pounds per average day)</i> | <i>54 lbs./day</i> | <i>54 lbs./day</i> | <i>82 lbs./day</i> | <i>54 lbs./day</i> | <i>None</i> |
| Exceed Threshold? | <i>No</i> | <i>No</i> | <i>No</i> | <i>No</i> | <i>No</i> |

*Based on 572 Workdays

Fugitive Dust

Site preparation and grading may generate wind-blown dust that could contribute particulate matter into the local atmosphere. The BAAQMD has not established a quantitative threshold for fugitive dust emissions but rather states that projects that incorporate best management practices for fugitive dust control during construction would have a less than significant impact related to fugitive dust emissions. The Project would be conditioned as required by Mitigation Measure AQ-1 to include these measures; therefore, this impact would be less than significant with mitigation.

Mitigation Measure

The BAAQMD 2017 *CEQA Air Quality Guidelines* Basic Construction Mitigation Measures would be required for all projects to reduce temporary construction impacts through implementation of Mitigation Measure AQ-1.

AQ-1 Basic Construction Mitigation Measures

The Project shall be required to reduce construction emissions of reactive organic gases, nitrogen oxides, and particulate matter (PM₁₀ and PM_{2.5}) by implementing the BAAQMD's Basic Construction Mitigation Measures (described below) or equivalent, expanded, or modified measures based on project and site specific conditions.

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day, with priority given to the use of recycled water for this activity when feasible.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping shall be prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph and Contractor must install and maintain appropriate speed limit signage where appropriate.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times for all construction-related diesel and gasoline powered engines when not in operation including worker vehicles shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes. Clear signage regarding idling shall be provided for construction workers at all times.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic or certified visible emissions evaluator and determined to be running in proper condition prior to operation. The Lead Agency shall post a publicly visible sign with the telephone number and person to contact regarding dust complaints. Any complaint received must be responded to immediately and corrective action must be taken within 48 hours.

Significance After Mitigation

Impacts would be less than significant with implementation of Mitigation Measures AQ-1.

Threshold: Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Impact AQ-4 IMPLEMENTATION OF THE PROJECT WOULD NOT CREATE OBJECTIONABLE ODORS THAT COULD AFFECT A SUBSTANTIAL NUMBER OF PEOPLE. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Table 4.3-4 provides BAAQMD odor screening distances for land uses with the potential to generate substantial odor complaints. Those uses include wastewater treatment plants, landfills or transfer stations, refineries, composting facilities, confined animal facilities, food manufacturing, smelting plants, and chemical plants. None of the uses identified in the table would occur on the project site. Therefore, the project would not generate objectionable odors affecting a substantial number of people during operation.

During construction activities, heavy equipment and construction vehicles may emit odors associated with engine exhaust both during normal use and when idling. Asphalt paving will occur, which also has distinctive odor. However, these odors would be temporary and transitory and would cease upon off hours (nights and weekends) and project completion. Operation of the replacement bridge is not expected to increase vehicle use beyond the baseline condition. Therefore, the Project would not generate objectionable odors affecting a substantial number of people. This impact would be less than significant.

Mitigation Measures

Mitigation measures are not required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

4.3.4 Cumulative Impacts

The cumulative context for air quality is localized to the bridge footprint and surrounding area. This is appropriate because air quality impacts for construction projects are localized and generally do not expand much further than their point of origin. The construction of the new Bohemian Highway Bridge would not result in an increase in local and future air quality impacts, as it will replace the existing bridge. The NCSAPCD is in attainment for all criteria pollutants. The Project would contribute particulate matter and the ozone precursors ROG and NO_x to the area during construction and operation, but not to a level above BAAQMD significance thresholds. Implementation of mitigation measure AQ-1 will further limit construction associated PM₁₀ and PM_{2.5} emissions. As the project does not exceed described thresholds, it would not expose sensitive receptors to a cumulatively considerable amount of pollutants. Therefore, the Project would not result in cumulative impacts.

This page intentionally left blank.

Biological Resources Table of Contents

| | | |
|-------|---------------------------|--------|
| 4.4 | Biological Resources..... | 4.4-1 |
| 4.4.1 | Setting..... | 4.4-2 |
| 4.4.2 | Regulatory Setting | 4.4-24 |
| 4.3.3 | Impact Analysis | 4.4-30 |
| 4.3.4 | Cumulative Impacts | 4.4-55 |

Tables

| | | |
|-------------|--|--------|
| Table 4.4-1 | Special-Status Plant Species with Potential to Occur in the BSA..... | 4.4-12 |
| Table 4.4-2 | Special-Status Wildlife Species with Potential to Occur in the BSA | 4.4-14 |
| Table 4.4-3 | Potential waters of the U.S/State and CDFW Jurisdictional Areas..... | 4.4-24 |
| Table 4.4-4 | Potential Impacts to Waters of the U.S./State within USACE, RWQCB and CDFW Jurisdictional Areas | 4.4-48 |

Figures

| | | |
|--------------|--|--------|
| Figure 4.4-1 | Biological Study Area | 4.4-2 |
| Figure 4.4-2 | Vegetation Communities and Cover Classes | 4.4-8 |
| Figure 4.4-3 | Potential United States Army Corps of Engineers and Regional Water Quality Control Board Jurisdiction..... | 4.4-23 |
| Figure 4.4-4 | Potential California Department Fish and Wildlife Jurisdiction..... | 4.4-23 |
| Figure 4.4-5 | Potential Impacts to Potential U.S. Army Corps of Engineers and Regional Water Quality Control Board OHWM Jurisdiction..... | 4.4-47 |
| Figure 4.4-6 | Potential Impacts to CDFW Jurisdictional Areas..... | 4.4-48 |

4.4 Biological Resources

This section evaluates the potential for significant impacts to biological resources that would result from development facilitated by the Project. A Natural Environmental Study (NES) and Biological Assessment (BA) prepared for the Project evaluated the biological conditions within the Biological Study Area (i.e., plant and wildlife species, special-status fish, vegetation communities, jurisdictional waters, wildlife movement areas, and other sensitive habitats) and assessed the potential for significant impacts to biological resources as a result of Project implementation. GPA consultants completed the NES and BA in March and April 2021, respectively (GPA, 2021a, 2021b). A summary of the results of the NES are presented in this section, together with additional biological review and field surveys conducted during the summer and fall of 2021 by County of Sonoma staff, as described below. The impact analysis presented in this section is based on the findings of the NES, BA, and additional biological studies and analysis conducted by the County of Sonoma staff during the summer and fall 2021.

Comments received in response the Notice of Preparation (NOP) circulated in March 2021 included concerns about impacts to cliff swallows nesting on the existing bridge; concerns about general wildlife, including ducks and bats; and impacts to Dutch Bill Creek, particularly to its riparian habitat and steelhead spawning areas. The California Department of Fish and Wildlife (CDFW), a trustee agency under California Environmental Quality Act (CEQA), recommended surveys for special-status species with potential to occur and botanical surveys during the blooming period for all sensitive plant species with the potential to occur.

To the extent that issues identified in public comments involve potentially significant effects on the environment according to CEQA, and/or were raised by responsible and trustee agencies and/or the public, they are identified and addressed in this EIR.

Biological Study Area

The Biological Study Area (BSA) for the Project includes construction and access areas required to remove the existing bridge and construct the proposed replacement bridge, including those areas that could be directly or indirectly impacted by the Project, either temporarily or permanently. The BSA is shown in Figure 4.4-1, below. The limits of the BSA were determined by reviewing Project plans and aerial photography, together with construction staging and design plans. The BSA is approximately 11 acres and includes the permanent Project footprint, temporary construction work areas, potential staging areas, and a 25-foot buffer. The BSA includes the existing Bohemian Highway Bridge, Russian River, Dutch Bill Creek, portions of the Monte Rio Recreational and Parks District's (MRRPD) beaches and parking areas, CDFW's Monte Rio Fishing Access parking lot, and portions of local streets, including Bohemian Highway, Main Street, and Moscow Road (See also Figures 2-2 and 2-3 for Project area landmarks).

Figure 4.4-1 Biological Study Area



4.4.1 Setting

The description of biological resources within the BSA is based on technical surveys and assessments conducted during the preparation of the NES and BA in preparation for this EIR and associated impact analysis, together with additional surveys conducted by County of Sonoma staff in 2021. A summary of studies conducted and literature and databases reviewed is provided below.

a. Summary of Previous Studies

Bohemian Highway Bridge over Russian River Replacement Natural Environmental Study (NES) (Caltrans, 2021a, prepared by GPA). The NES summarizes results of the reconnaissance level surveys and assessments of the BSA on June 25 and 26, 2019 by GPA biologists. The survey included evaluating the BSA for potential habitat for wildlife and signs of wildlife presence, including urine staining, guano and/or scat, whitewash, nests, potential burrows, and direct observations of wildlife. The survey also included an inventory of plant species and vegetation communities present onsite to determine the potential presence of special status plants. Nomenclature for plants and animals in the NES conforms to the Jepson eFlora (Jepson Flora Project [eds.], 2019) and the California Natural Diversity Database (CNDDDB) (CDFW, 2021a). Additionally, a Level 2: Preliminary Field Assessment for bat species was completed to determine if there is suitable habitat and/or signs of bat use within the BSA. Level 2 surveys include a daytime survey of the project area (California Department of Transportation, 2019). No special-status plant or animal species were observed during the assessments.

In addition to the reconnaissance level plant and wildlife surveys, GPA conducted a delineation for federal and state waters and wetlands on June 25, 2019. Potential state and federal wetlands were assessed in accordance with *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (United States Army Corps of Engineers, 2010), which is a supplement to the *Corps of Engineers Wetlands Delineation Manual* (United States Army Corps of Engineers, 1987). The field delineation included an onsite analysis of vegetation, soils, and hydrology within the BSA to determine potential wetland areas. The ordinary high water mark (OHWM) was delineated in accordance with *A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States* (United States Army Corps of Engineers, 2014).

Bohemian Highway Bridge over Russian River Replacement Biological Assessment (Caltrans, 2021b, prepared by GPA). The Biological Assessment (BA) provides technical information to the National Marine Fisheries Service (NMFS) on the proposed Project in sufficient detail to determine to what extent the project may affect federally listed fish species under the federal Endangered Species Act of 1973 (FESA) and Essential Fish Habitat (EFH) for Pacific salmon. In the BSA, there is potential for the federally and state endangered coho salmon – central California coast (CCC) evolutionary significant unit (ESU) (*Oncorhynchus kisutch* pop. 4), federally threatened steelhead – CCC distinct population segment (*Oncorhynchus mykiss irideus* pop. 8), and chinook salmon – California coastal (CC) ESU (*Oncorhynchus tshawytscha* pop. 17) to be present. In addition, the Russian River is designated critical habitat for the CCC coho salmon, CCC steelhead, and CC Chinook salmon and Dutch Bill Creek is designated critical habitat for CCC coho salmon and CCC steelhead. The BA provides conservation measures to avoid, minimize and mitigate for potential impacts to salmonids. Caltrans, acting as the National Environmental Policy Act (NEPA) federal lead agency for the proposed project, submitted the BA to NFMS on May 5, 2021 to initiate formal consultation under Section 7 of the federal ESA.

b. Additional Field Review

In addition to the studies completed from the preparation of the NES and BA described above, the following technical studies were conducted for the preparation of this EIR:

Rare Plant Surveys Protocol-level surveys for special-status plant species following U.S. Fish and Wildlife (USFWS), CDFW and California Native Plant Society (CNPS) survey guidelines and protocols (USFWS, 2002; CDFW, 2018; and CNPS, 2001) were conducted on February 23, March 24 and July 28, 2021 by County of Sonoma biologists Richard Stabler and Deborah Waller, Senior Environmental Specialists. Surveys were timed to coincide with the blooming periods of those special-status plant species identified as potentially occurring, based on the availability of suitable habitat, including soil types, within the BSA. Reference site visits to known occurrences of species identified as potentially occurring within the BSA were made when possible. During the surveys, a comprehensive list of plant species observed on the site was compiled following the nomenclature for plants used in the Jepson eFlora (Jepson Flora Project, 2021). No special-status plant species were observed during any of the three rare plant 2021 survey dates. Additional details are included in the Description of Existing Biological and Physical Conditions section below.

c. Literature/Database Review

As a part of the NES and BA preparation, GPA conducted a literature, database, and aerial imagery review to determine if special-status biological resources are present or potentially present within or near the BSA. Sources used to determine if special-status biological resources are present or potentially present in or near the BSA are listed below. Select sources were updated by County staff in 2021.

- CDFW California Natural Diversity Database (CNDDDB) (California Department of Fish and Wildlife, 2021a) for the Fort Ross, Cazadero, Guerneville, Arched Rock, Duncan Mills, Camp Meeker, Bodega Head, and Valley Ford 7.5-minute series topographic quadrangles;
- CDFW Biogeographic Information and Observation System (BIOS), including areas within 5 miles of the Project site (California Department of Fish and Wildlife, 2021b);
- CDFW Spotted Owl Observations in BIOS (California Department of Fish and Wildlife, 2021c)
- California Native Plant Society (CNPS) Rare Plant Inventory (California Native Plant Society, Rare Plant Program, 2020/2021)
- Google Earth (Google Earth, 2018- 2021);
- NMFS West Coast Region California Species List (National Marine Fisheries Service, 2016, 2021)
- NMFS EFH mapper (National Marine Fisheries Service, 2018);
- Natural Resources Conservation Service (NRCS) Web Soils Survey for Sonoma County, California (Natural Resources Conservation Services, 2019);
- USFWS National Wetlands Inventory Wetlands Mapper (U.S Fish and Wildlife Services, 2019a); and
- USFWS Information for Planning and Consultation Database (IPaC) (U.S. Fish and Wildlife Service, 2020, 2021)

Description of the Existing Biological and Physical Conditions

This section describes the existing biological setting within the Project area, focusing on the approximately 11 acre BSA.

a. Regional Description

The Project area is located within the North Coast Ranges Subregion, Outer North Coast Ranges District of the California Florist Province, in the unincorporated town of Monte Rio, Sonoma County, California. The Project area is characterized by high rainfall, as well as by redwood, mixed evergreen and mixed hardwood forests. This region is also characterized by sloping hills near the central California coast from which cold air drains within the fog belt.

The existing and proposed bridge alignments span the Russian River (Figures 2-2 and 2-3). The Project area is mostly within the Lower Russian River Hydrologic Area and Russian River Hydrologic Unit. The watershed encompasses areas of Sonoma and Mendocino counties. At the existing bridge, the watershed drains an area of 1,375.7 square miles (USGS, 2020). The proposed bridge will be at an alignment downstream of the existing bridge. Dutch Bill Creek, a tributary to the Russian River, joins with the Russian River in between alignments of the existing and proposed bridges (Figure 2-2). At the proposed bridge, the watershed drains an area of 1,387.7 square miles (USGS, 2020).

The lower Russian River flows generally in the east to west direction and eventually empties into the Pacific Ocean approximately 10 miles west of the Project site.

b. Project Site Description

The Project site and BSA are in the community of Monte Rio, Sonoma County, a popular tourist and recreational area along the Russian River (Figures 2-2, and 2-3). Public beaches are on the north and south sides of the river and areas directly to the north and south ends of the bridge are occupied by small commercial businesses, such as a grocery store, restaurant, and accounting office. Beyond the main commercial areas, surrounding land use is generally residential, but also includes other stores and restaurants, a skate park, elementary school, and several inns and hotels along the north and south sides of the river. The BSA is within Township 7 North, Range 10 West, Section 7, and is located at latitude 38.466080, and longitude -123.009929.

c. Existing Conditions

Topography

The topography of the BSA is relatively flat with an elevation of approximately 10 to 43 feet above mean sea level (msl). However, there are steep slopes along the southern banks of the Russian River and both banks of Dutch Bill Creek. The BSA is situated approximately 10 miles from the Pacific coastline and is surrounded by coastal hills.

Climate

The BSA is within the California Energy Commission's Climate Zone 2, which includes the hilly coastal range to the edge of the northern coastal valley (Pacific Energy Center, 2006). Based on climate data from Santa Rosa, California the average annual high temperature for the project vicinity is approximately 71.8 degrees Fahrenheit and the average annual low temperature is approximately 44.5 degrees Fahrenheit. The average annual rainfall is approximately 31.18 inches, with the greatest amount of rain typically falling November through April (National Oceanic and Atmospheric Administration, 2019)

Soils

According to the NRCS Web Soil Survey for Sonoma County, there are two soil units mapped within the BSA: Hugo Very Gravelly Loam, 50 to 75 Percent Slopes; and Yolo Sandy Loam, 0 -2 Percent Slopes; (Natural Resources Conservation Services, 2019).

Hugo Very Gravelly Loam, 50 to 75 Percent Slopes

Hugo very Gravelly Loam, 50 to 75 Percent Slopes are composed of 85 percent Hugo (and similar soils) and 15 percent minor components (Josephine, Laughlin, Maymen, and Atwell). This soil unit is recorded as well drained, more than 80 inches to the water table, and approximately 40 to 60 inches to a restrictive layer (paralithic bedrock). This soil unit is not considered hydric and does not contain serpentine mineral.

Yolo Sandy Loam, 0 to 2 Percent Slopes

Yolo Sandy Loam, 0 to 2 Percent Slopes are composed of 85 percent Yolo (and similar soils) and 15 percent minor components (Cortina, Pajaro, and Zamora). This soil unit is recorded as well drained, more than 80 inches to the water table, and more than 80 inches to a restrictive layer. This soil unit is not considered hydric and does not contain serpentine mineral.

Hydrology

The BSA is within the Russian River Watershed (HUC 18010110), which covers approximately 1,485 square miles (U.S. Geological Survey, 2018). Waterways in this watershed include the Russian River (approximately 110 miles), and 238 streams and creeks (Russian River Watershed Association, 2019). There are two permanent dams within the Russian River Watershed, Warm Springs Dam (Sonoma Lake) and Coyote Valley Dam (Lake Mendocino). The Warm Springs Dam is in Dry Creek, which is a tributary to the Russian River, and the Coyote Valley Dam is in the East Fork of the Russian River (North Coast Regional Water Quality Control Board, 2020). Both dams are upstream of the BSA. Within the Russian River Watershed, the BSA is in the Dutch Bill Creek-Russian River Sub-watershed, which covers approximately 55 square miles (U.S. Environmental Protection Agency, 2017). Hydrologic features in the BSA include the Russian River and Dutch Bill Creek. Temporary summer dams are installed annually by the Russian River Recreation and Parks District at Johnson's Beach and Vacation Beach near Guerneville, approximately three to four miles, respectively, upstream from Monte Rio.

Russian River

The Russian River headwaters are in Potter and Redwood Valleys approximately 15 miles north of Ukiah in Mendocino County. The Russian River is a perennial waterway, approximately 110 miles long, and flows in a generally southern direction from its headwaters to Forestville, where it changes to a generally western direction as it crosses the Coast Ranges (Sonoma Water, 2019). The Russian River flows east to west through the BSA, with a sandy, gravel beach on the north bank, and a steep, vegetated south bank. The Russian River is under jurisdiction of the USACE, RWQCB, and CDFW and others and others.

Dutch Bill Creek

The Dutch Bill Creek headwaters are north of Occidental, California. Dutch Bill Creek is approximately eight miles long and flows in a northern direction from its headwaters to the confluence with the Russian River in Monte Rio, California (Gold Ridge Resource Conservation District, 2016). The lower reach of Dutch Bill Creek (confluence with the Russian River) dries in late summer and early fall. Dutch Bill Creek flows south to north within the BSA and consists of steep vegetated banks. Dutch Bill Creek is under jurisdiction of the USACE, RWQCB, and CDFW.

Vegetation Communities and Cover Classes

Vegetation within the BSA includes a mix of native and non-native species. Four vegetation communities and three cover classes were identified in the BSA including *Fraxinus latifolia* Forest Alliance (Oregon Ash Groves), *Salix exigua* Scrubland Alliance (Sandbar Willow Thickets), Ornamental, Ruderal, Open Water, Developed, and Sandy Beach (see **Figure 4.4-2**). Oregon Ash Groves are on the CDFW California Sensitive Natural Communities list as S3 (Vulnerable – restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation) (California Department of Fish and Wildlife, 2020). Vegetation communities were classified using the Manual of California Vegetation (Sawyer, Keeler-Wolf, & Evens, 2012). Vegetation communities and cover classes are described below. A list of plant species observed during biological surveys is available at Sonoma County Permit and Resource Management Department and will be provide upon request.

Vegetation Communities

***Fraxinus Latifolia* Forest Alliance (Oregon Ash Groves)**

Oregon Ash Groves are dominated by Oregon ash (*Fraxinus latifolia*) in the tree canopy. Characteristic species in this community include bigleaf maple (*Acer macrophyllum*), white alder (*Alnus rhombifolia*), incense cedar (*Calocedrus decurrens*), ponderosa pine (*Pinus ponderosa*), California black oak (*Quercus kelloggii*), interior live oak (*Quercus wislizeni*), and red willow (*Salix laevigata*). The Oregon ash comprises more than five percent of the absolute cover and more than 30 percent of the relative cover in the tree canopy. This community is characterized by trees taller than 82 feet, an open to continuous tree canopy, a sparse to intermittent shrub layer, and a variable herbaceous layer.

Within the BSA this community is along the southern bank of the Russian River and on along the banks of Dutch Bill Creek and characteristic species present include Oregon ash, big leaf maple, and red willow. Within the BSA, some areas are dominated by invasive species such as English ivy (*Hedra helix*), Himalayan blackberry (*Rubus armeniacus*), and periwinkle (*Vinca major*).

Figure 4.4-2 Vegetation Communities and Cover Classes



***Salix exigua* Shrubland Alliance (Sandbar Willow Thickets)**

Sandbar Willow Thickets are dominated by sandbar willow (*Salix exigua*) in the shrub canopy. Characteristic species in this community include mule fat (*Baccharis salicifolia*), California brickellbush (*Brickellia californica*), California wild rose (*Rosa californica*), Himalayan blackberry (*Rubus armeniacus*), California blackberry (*Rubus ursinus*), arroyo willow (*Salix lasiolepis*), and dusky willow (*Salix melanopsis*). The sandbar willow comprises more than 50 percent of the relative cover in the shrub canopy or more than 30 percent of the relative cover with arroyo willow. This community is characterized by shrubs less than 23 feet tall, an intermittent to continuous shrub canopy, and a variable herbaceous layer.

Within the BSA this community is on a sandbar along the southern bank of the Russian River and characteristic species present include sandbar willow.

Ruderal

Ruderal communities are typical in early successional stages following extreme human disturbance, or recurrent natural disturbance. This community is dominated by annual and perennial, introduced/non-native, pioneering, herbaceous plants that readily colonize disturbed ground.

Ruderal communities often exist along roadsides and fence lines, near developments, and in other areas where vegetation has been substantially altered by mowing or herbicide. Within the BSA, Ruderal areas are on the southeast side of the bridge, north of Main Street and along roadsides. Common ruderal species in the BSA include, but are not limited to, crabgrass (*Digitaria* sp.), slender oat (*Avena barbata*), fennel (*Foeniculum vulgare*), field mustard (*Brassica rapa*), and rough cat's ear (*Hypochaeris radicata*).

Cover Classes

Open Water

Open water areas are permanently or intermittently flooded waterways or other features that may support sparse emergent or submerged vegetation or may be unvegetated. Within the BSA, Open Water areas are mostly represented in the Russian River and to a much lesser degree in Dutch Bill Creek.

Developed

Developed areas are where human disturbance has resulted in permanent impacts on natural communities. These include paved areas, buildings, bridges, sidewalks, and other structures. Within the BSA, the Developed area includes the Bohemian Highway, county roads, the bridge, paved parking lots, and buildings.

Sandy Beach

Sandy Beach areas predominantly have sandy sediment and gravel, are along a waterway, and provide a recreational area for the public. Within the BSA, Sandy Beach areas are on the northern banks and southwestern bank of the Russian River.

Wetlands and Waters Habitats

Wetland and waters habitats within the BSA were classified according to the current USFWS' National Wetland Inventory classification system and were determined to fall into two general systems, Riverine (Cowardin, Carter, Golet, & LaRoe, 1979) and Riparian (U.S. Fish and Wildlife Service, 2019b). Within the BSA, the Riverine and Riparian systems were observed in association with Russian River and Dutch Bill Creek. No wetland areas meeting all three wetland criteria (soils, hydrology and vegetation) were observed during the water and wetland delineation conducted by GPA (GPA, 2021a).

Riverine System

A Riverine system includes all wetlands and deepwater habitats within natural and artificial stream, river, or ditch channels with two exceptions: 1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and 2) habitats with water containing ocean-derived salts of 0.5 part per thousand or greater. A channel is "an open conduit either naturally or artificially

created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water” (Cowardin, Carter, Golet, & LaRoe, 1979). The Riverine system within the BSA includes Russian River and Dutch Bill Creek.

Riparian System

The USFWS Riparian system, defines riparian areas as plant communities contiguous to and affected by surface and subsurface hydrologic features of perennial or intermittent lotic and lentic water bodies (rivers, streams, lakes, or drainage ways). Riparian areas are usually transitional between wetland and upland. Riparian areas have one or both of the following characteristics: 1) distinctly different vegetative species than adjacent areas, and 2) species similar to adjacent areas but exhibiting more vigorous or robust growth forms (U.S. Fish and Wildlife Service, 2019b). The Riparian System within the BSA includes portions of the Oregon Ash Groves and Sandbar Willow Thickets, on the banks of Russian River and Dutch Bill Creek.

General Wildlife

Although highly disturbed by construction and demolition of previous bridges at the Project site, vegetation communities, and creek and river habitats within the BSA provide suitable habitat to support nesting birds, roosting bats, foraging mammals, migrating fish, amphibians, reptiles, and invertebrates. Terrestrial mammals such as voles, rabbits, skunks, possums, raccoons, squirrels, deer, bobcats, and coyotes are likely to use the BSA, at least periodically, for foraging and/or as a movement corridor. Wildlife species observed during surveys included mallard (*Anas platyrhynchos*), scrub jay (*Aphelocoma californica*), house sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris*), mourning dove (*Zenaida macroura*), turkey vulture (*Cathartes aura*), and great blue heron (*Ardea herodias*). Cliff swallow (*Petrochelidon pyrrhonota*) nests were observed on the existing bridge and smallmouth bass (*Micropterus dolomieu*) were observed in the river. A list of species observed during biological studies conducted by GPA Consultants and County staff is available at Sonoma County Permit and Resource Management Department and will be provide upon request.

Wildlife Movement Corridors

Wildlife movement corridors, or habitat linkages, are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animals populations or those populations that are at risk of becoming isolated. Such linkages may serve a local purpose, such as providing a linkage between foraging and denning areas, or they may be regional in nature. Some habitat linkages may serve as migration corridors, wherein animals periodically move away from an area and then subsequently return. Others may be important as dispersal corridors for young animals. A group of habitat linkages in an area can form a wildlife corridor network. The California Essential Habitat Connectivity Project, commissioned by the California Department of Transportation and CDFW, identifies “Natural Landscape Blocks” that support native biodiversity and the “Essential Connectivity Areas” (ECAs) or movement corridors which link them (Spencer et al. 2010).

Some portions of the BSA are mapped as a “Less Permeable” ECA in the Biogeographic Information and Observation System (CDFW 2021b) and connect two Natural Landscape Blocks, Armstrong Redwoods State Preserve at the northern extent and the Sonoma Coast State Park to the south along the coast. This ECA’s designation within the BSA is “Less Permeable,” indicating the area is along the outer fringe of the ECA and is therefore less permeable to ecological flows. Movement is

more permeable to wildlife movement in the central portion of the ECA, to the west and outside of the BSA, where it is designated as “More Permeable.” Nonetheless, the ECA within the BSA represents important natural habitat for a wide range of species and supports genetic connectivity and movement along much of the northern California coast.

Wildlife movement corridors can be both large and small in scale. Riparian corridors and waterways within the BSA, including the Russian River and Dutch Bill Creek, provide local opportunities for fish and wildlife. Existing trails and roads within the BSA also act as corridors for wildlife movement, particularly for relatively disturbance-tolerant species such as raccoon, skunk, deer, and bobcat. Overall, the riparian areas and waterways provide an additional movement corridor for terrestrial and aquatic connectivity and the BSA is expected to be used for local foraging and movement of wildlife in the project vicinity.

Special-Status Species and Sensitive Natural Communities

A current CNDDDB special-status species list was obtained on November 14, 2021 to identify federally and state listed species with the potential to be in the BSA based on their geographical range. USFWS and NMFS species lists were obtained on March 1, 2018 and updated on October 14, 2020 and November 13, 2021 to identify potentially occurring species and their critical habitat within the BSA. A CNPS species list was obtained on March 1, 2018 and updated on October 14, 2020 and November 13, 2021 to identify federally, state listed, and CNPS ranked plant species with the potential to be in the BSA. CNDDDB, CNPS and USFWS special-status species lists are available at Sonoma County Permit and Resource Management Department and will be provide upon request

The following discussion describes the special-status plant, and wildlife species and sensitive natural communities with potential to be in the BSA based on (1) a record reported in the CNDDDB, NMFS , USFWS and CNPS species lists, (2) the presence of suitable habitat, and (3) survey results, including reconnaissance surveys in 2019 and rare plant surveys conducted in 2021.

Sensitive Natural Communities

The CNDDDB identifies four special-status natural communities with the potential to occur in the BSA based on geographical location, including: Coastal and Valley Freshwater Marsh; Coastal Brackish Marsh; Coastal Terrace Prairie; and Northern Coastal Salt Marsh. Based on the biological reconnaissance field surveys conducted by GPA in 2019 and rare plant surveys conducted by County staff in 2021, none of the CNDDDB special-status natural communities occurs within the BSA. However, in addition to the CNDDDB, sensitive communities are also provided in CDFW’s California Natural Community List (CDFW 2021d) and one natural community, Oregon Ash Groves, is listed as a sensitive community. In addition, riverine and riparian jurisdictional features are also considered special-status communities.

Special Status Plants

For the purpose of this evaluation, special-status plant species include plants that are (1) listed or proposed for listing as threatened or endangered under the FESA; listed or candidates for listing as threatened or endangered under CESA; (2) designated as rare by under the California Native Plant Protection Act; and/or (4) have a California Rare Plant Rank of 1A, 1B, or 2A or 2B, or considered locally significant plants, that is, plants that re not rare from a statewide perspective, but that are rare or uncommon locally or regionally, or designated in a local or regional plan, policy or ordinance.

Based on results of the CNDDDB, CNPS, and USFWS database searches, a total of 76 special-status plant species may occur in the general vicinity of the BSA. Of these, 71 were removed from consideration due to the lack of suitable habitat within the BSA or Project vicinity, or because the project site is outside of the species’ known range. For example, species occurring in coastal dunes, coastal bluffs, tidal or salt marsh, chaparral, and/or serpentine, ultra-mafic, or volcanic substrates and other habitats not found in the BSA are not addressed further in this EIR.

Although habitat at the site has a long history of disturbance due to construction and demolition of bridges (including construction of the existing bridge in 1934) and ongoing recreational use, five (5) special-status plant species were considered to have a potential for occurrence based on evaluation of habitat types occurring within the BSA and species range. Species potential for occurrence is from very low to moderate due to the long term historical disturbances within the BSA as well as limited known occurrences/rarity of the species within Sonoma County (CDFW 2021a). The five potentially occurring special-status species are listed in Table 4.4-1, and described in detail below.

Table 4.4-1 Special-Status Plant Species with Potential to Occur in the BSA

| Common Name | Scientific Name | Status | Potential to Occur |
|--------------------------|---|--------|--------------------|
| Sonoma alopecurus | <i>Alopecurus aequalis</i> var. <i>sonomensis</i> | FE | Very low |
| Bristly sedge | <i>Carex comosa</i> | 2B.1 | Very low |
| Western leatherwood | <i>Dirca occidentalis</i> | 1B.2 | Moderate |
| Two-fork clover | <i>Trifolium amoenum</i> | FE | Very low |
| Congested headed tarweed | <i>Hemizonia congesta</i> ssp. <i>congesta</i> | 1B.2 | Very low |

Notes: FE = Federal Endangered; SR = State Rare; ST = State Threatened; SE = State Endangered; State Rare Plant Rank

Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*) is listed as endangered under the federal Endangered Species Act with a state Rare Plant Rank of 1B.1. No critical habitat has been established for this species. It is a tufted, perennial member of the grass family endemic to California. Suitable habitat includes perennial freshwater wetlands and riparian scrub including wet areas, marshes, and riparian banks. CNDDDB lists two locations within five miles of the Project, including one in Guerneville approximately three miles to the east, and one in Duncan’s Mills, approximately three miles to the west. Both locations are presumed extant although there are no recent observations at either location and both locations need more field work to determine current presence. No Sonoma alopecurus were observed during rare plant surveys for this project.

Bristly sedge (*Carex comosa*) is a rare (state Rare Plant Rank of 2B.1) perennial glasslike herb that is native to California, and also found elsewhere in North America. It is found in marshes and swamps, coastal prairie, and valley and foothill grasslands, lake margins, wetlands and riparian areas. There is one historical occurrence in the Project vicinity, attributed to a 1986 collection from along the Russian River in Guerneville, although it is believed to be extirpated (CDFW, 2021a). It is known from only two locations in Sonoma County. Besides the historic Guerneville location, it is known from mouth of Salmon Creek (CDFW, 2021a). No bristly sedge was observed during rare plant surveys in 2021.

Western leatherwood (*Dirca occidentalis*) is a rare (state Rare Plant Rank of 1B.2) perennial deciduous shrub that is endemic to California. It is found in broadleaved upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, riparian forest, and riparian woodland habitats. It has a moderate potential to occur on the project site due to the availability of suitable habitat adjacent to Dutch Bill Creek and the Russian River. A reference site visit to a population (CNDDDB Occurrence #32) near the town of Bodega (approximately 9 miles from the Project site) was made by County staff on several occasions during February 2021 to verify the flowering period of this species prior to rare plant surveys. This species was observed to be in flower at the Bodega reference site (CNDDDB Occurrence #32), on February 15, 2021, prior to the February 23, 2021 rare plant surveys at the Project site. No western leatherwood was observed during rare plant surveys in 2021.

Congested hayfield tarweed (*Hemizonia congesta* ssp. *congesta*) is a rare (state Rare Plant Rank of 1B.2) annual herb endemic to California. Suitable habitat includes coastal scrub, valley and foothill grassland, and fallow fields. It is occasionally found along roadsides. This species is relatively tolerant of human disturbance, such as mowing, minor and infrequent ground disturbance, as such marginal habitat may occur along roadsides and grassland areas. There is one recorded location for this species approximately 4 miles from the Project site, just north of the town of Occidental. Hayfield tarweed was not detected during rare plant surveys conducted in 2021.

Two-fork clover (*Trifolium amoenum*) is federally endangered and rare (state Rare Plant Rank of 1B.1) annual herb that is endemic to California. It occurs in valley and foothill grassland and coast bluff scrub, sometimes on serpentine. It has been found along roadsides in disturbed grassland. The closest occurrence to the Project site is along a roadside near the town of Occidental. No two-fork clover was observed during rare plant surveys in 2021.

None of the potentially occurring special-status species listed above or any special-status plant species were observed during reconnaissance surveys in 2019 or the rare plant surveys conducted in 2021 following CNPS and CDFW rare plant survey guidelines and protocols (CNPS 2001, CDFW 2018). Therefore, Project activities are not anticipated to impact any of the five special-status plant species listed above. A list of plant species observed during the 2021 rare plant surveys is available at Sonoma County Permit and Resource Management Department and will be provide upon request

Special Status Wildlife

For the purpose of this evaluation, special-status animal species include species that are (1) listed as threatened or endangered under the CESA or the ESA; (2) proposed for federal listing as threatened or endangered; (3) state or federal candidates for listing as threatened or endangered; and/or (4) identified by CDFW as Species of Special Concern or California Fully Protected Species.

Results of the CNDDDB and USFWS IPaC searches indicated 66 special-status wildlife species known to occur within a five-mile radius of the site. Of these, 51 species are not expected to occur on the project site due to the presence of marginally suitable nesting or breeding habitat or the lack of such habitat, or the site is outside of the species' known range. The remaining 18 species are either known from recorded occurrences, observed during recent surveys, or have very low to moderate potential to occur. These 18 species are listed in Table 4.4-2 and discussed in more detail further below.

Table 4.4-2 Special-Status Wildlife Species with Potential to Occur in the BSA

| Common Name | Scientific Name | Status | Potential to Occur |
|--|---|-------------------|--|
| Invertebrates | | | |
| Giuliani's dubiraphian riffle beetle | <i>Dubiraphia giulianii</i> | None ¹ | Very Low |
| Obscure bumble bee | <i>Bombus caliginosus</i> | None ¹ | Very Low |
| Western bumble bee | <i>Bombus occidentalis</i> | None ¹ | Very low |
| Western ridged mussel | <i>Gonidea angulata</i> | None ¹ | Very low |
| Fish | | | |
| coho salmon - central California coast ESU | <i>Oncorhynchus kisutch</i> | FE, SE | Known to migrate through Russian River and spawn in upper portions of Dutch Bill Creek |
| steelhead – central California DPS | <i>Oncorhynchus mykiss irideus</i> pop. 8 | FT | Known to migrate through Russian River and spawn in Dutch Bill Creek |
| chinook salmon - California coastal ESU | <i>Oncorhynchus tshawytscha</i> | FT | Known to use Russian River as migration corridor |
| Pacific lamprey | <i>Entosphenus tridentatus</i> | SSC | Known to Occur in Russian River |
| Russian River tule perch | <i>Hysterocarpus traski pomo</i> | SSC | Known to occur in Russian River |
| Navarro roach | <i>Lavinia symmetricus navarroensis</i> | SSC | Known to occur in Russian River |
| Hardhead | <i>Mylopharodon conocephalus</i> | SSC | Known to occur in Russian River |
| Amphibians | | | |
| California giant salamander | <i>Dicamptodon ensatus</i> | SSC | Moderate |
| Foothill yellow-legged frog | <i>Rana boylei</i> | SSC | Moderate to high |
| Red-bellied newt | <i>Taricha rivularis</i> | SSC | Moderate |
| Reptiles | | | |
| Western pond turtle | <i>Emys marmorata</i> | SSC | Moderate |
| Birds | | | |
| Great blue heron | <i>Ardea herodias</i> | None ¹ | Foraging only - Observed foraging within BSA; no suitable nesting sites in BSA |
| Bald eagle | <i>Haliaeetus leucocephalus</i> | SE | Low (foraging only; no nesting habitat in BSA) |
| Yellow-breasted chat | <i>Icteria virens</i> | SSC | Low |
| Osprey | <i>Pandion haliaetus</i> | None ¹ | Foraging only - Observed flying within BSA; no suitable nesting sites in BSA |
| Double-crested cormorant | <i>Phalacrocorax auritus</i> | None ¹ | Foraging only - Observed flying within BSA; no suitable nesting sites in BSA |
| Mammals | | | |
| Pallid bat | <i>Antrozous pallidus</i> | SSC | Low to Moderate |
| Western red bat | <i>Lasiurus blossevillii</i> | SSC | Low to Moderate |
| Hoary bat | <i>Lasiurus cinereus</i> | None ¹ | Low to Moderate |

Status Notes: ESU = Evolutionarily Significant Unit; FT = Federal Threatened; FE = Federal Endangered; ST = State Threatened; SE = State Endangered; SSC – CDFW Species of Special Concern

1. Species has no federal or state special status designation, but is tracked by CNDDDB and listed on CDFW's Special Animals List (CDFW, 2021e).

Invertebrates

Obscure bumble bee (*Bombus caliginosus*) is a species on the CDFW Special Animals List with a state rank of S1S2. It is known from coastal areas from Santa Barbara north to Washington State. The habitat for this species is grassland and shrubland. Bumble bees require plants that bloom and provide adequate nectar and pollen throughout the colony's life cycle. Food plants include species of *Baccharis*, *Cirsium*, *Lupinus*, *Lotus*, *Grindelia* and *Phacelia*. The closest recorded occurrence to the Project site is from 1971 and is attributed to Armstrong Woods in Guerneville, although the exact location is unknown (CDFW, 2021a). This species was not observed during biological surveys, although there is suitable habitat within the BSA.

Western bumble bee (*Bombus occidentalis*) is a species on the CDFW Special Animals list with a state rank of S1. Formerly common throughout much of its range, populations from central California to southern British Columbia and west of the Sierra-Cascade Ranges have declined sharply since the late 1990s. Bumble bees, including *B. occidentalis*, are generalist foragers and have been reported visiting a wide variety of flowering plants. Bumble bees require plants that bloom and provide adequate nectar and pollen throughout the colony's life cycle. The habitat for this species includes open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows (Williams et al. 2014). The closest recorded occurrence to the Project site is approximately 5 miles away near Willow Creek, along the coast south of Jenner, in 1979 (CDFW, CNDDDB, 2021b). This species was not observed during reconnaissance or site assessments for the Project, however there is suitable habitat within the BSA.

Western ridged mussel (*Gonidea angulate*) is listed as on the CDFW's Special Animals list, with a state rank S1S2. This species is a sedentary, long lived mollusk found primarily in creeks and rivers. The species occurs on the bottom of streams, rivers and lakes with substrates that vary from gravel to firm mud, and include at least some sand, silt, or clay. Low shear stress (stress caused by fast flowing water over substrate), substrate stability, and flow refuges are important determinants of freshwater mussel survival. Originally, inhabited most of the state, now extirpated from Central and Southern California. This species is often present in areas with seasonally turbid streams, but absent from areas with continuously turbid water. This species requires a host fish to complete reproduction and dispersal.

This species is only known from historic records (1890's to 1940's) from east of Monte Rio to Forestville, approximately 1 miles from the Project site (CNDDDB). More recent surveys (early 2000s) in the area have not resulted in any known occurrences (CDFW, 2021a). This species was not observed during reconnaissance or site assessments for the Project.

Fish

Pacific lamprey (*Entosphenus Tridentatus*) is listed as a Species of Special Concern (SSC) by the CDFW. The Pacific lamprey is found in streams along the Pacific Coast north of San Luis Obispo. This species requires swift current gravel-bottomed areas for spawning with water temperatures between 53- and 64-degrees Fahrenheit. This species has been documented in the Russian River. No Pacific lamprey were observed during the biological surveys. However, there is suitable gravel

bottomed areas for spawning within the Russian River.

The Russian River tule perch (*Hysteroecarpus traski poma*) is listed as an SSC by the CDFW. The Russian River tule perch is found in low elevation streams of the Russian River system. This species typically requires mud to gravel bottomed pools deeper than three feet in clear, cool (below 77 degrees F), and well oxygenated flowing water. The Russian River tule perch is usually found near emergent aquatic vegetation or overhanging banks. This species has been documented in the Russian River.

Navarro roach (*Lavinia symmetricus navarroensis*) is listed as an SSC by the CDFW. The Navarro roach can adapt to varying habitats from coastal streams to mountain foothill streams. This species is found in small, warm intermittent streams and isolated pools and is thought to be abundant in the Russian River.

Hardhead (*Mylopharodon conocephalus*) are listed as an SSC by the CDFW. The hardhead prefers clear, deep pools with sand-gravel-boulder bottoms and slow water velocity and is not found where exotic centrarchids dominate. This species is known to be present in the Russian River.

Coho salmon (*Oncorhynchus kisutch*, Central California Coast ESU pop. 4) is listed as endangered under FESA and CESA. The extant population of the Coho salmon – central California coast ESU includes naturally spawned coho salmon originating from rivers south of Punta Gorda in Humboldt County south to and including Aptos Creek. Coho salmon spend approximately the first half of their life cycle rearing and feeding in streams and small freshwater tributaries. Spawning habitat includes small streams with stable gravel substrates. The remainder of the life cycle is spent foraging in estuarine and marine waters of the Pacific Ocean.

Adult Coho salmon begin migrating from the ocean to freshwater streams in September and continuing through January. Coho salmon spawning typically begins in November and continues through January; however, spawning can extend into February or March. Coho salmon will spend one year in fresh water, then smolts begin emigrating downstream to the ocean in late March or early April and continue to early June. Most coho salmon will remain in the ocean for two years before returning to their fresh water natal streams to spawn (California Department of Fish and Wildlife, 2020c).

The Russian River and Dutch Bill Creek are known spawning and rearing streams for coho salmon. In the upper reaches of Dutch Bill Creek (upstream of the confluence with Tyrone Gulch) conditions for Coho spawning are present, i.e., clean, loosely packed gravel with intergravel flow to aerate eggs, and cooler water temperatures. The lower reach of the Russian River and lower reach of Dutch Bill Creek provide migratory corridor habitat and could provide deep pools with food sources for rearing. In addition, there is a conservation hatchery program that was established in 2001, the Russian River Coho Salmon Captive Broodstock Program. This program is a collaborative effort between USACE, NMFS, CDFW, Sonoma Water, and California Sea Grant. Monitoring of released coho salmon documents increased returns to the Russian River watershed, including Dutch Bill Creek (California Sea Grant, 2020). The Russian River and Dutch Bill Creek were designated as critical habitat for this species in May 1999 (National Marine Fisheries Service, 1999); therefore, the portions of the Russian River and Dutch Bill Creek in the BSA are considered

coho salmon critical habitat.

The lower reaches of Dutch Bill Creek and the Russian River have been highly disturbed by the construction of dams and urbanization. The rearing and spawning habitat in the lower Russian River watershed (from Cloverdale downstream to Monte Rio) exceeds the thermal tolerances for spawning and rearing salmonids (National Marine Fisheries Service, 2008). Therefore, spawning and rearing are expected to be limited to the upper reaches of Dutch Bill Creek and other the Russian River tributaries. However, stream conditions are favorable to coho salmon migration within the BSA, including suitable water quality. Therefore, the portions of the Russian River and Dutch Bill Creek within the BSA are expected to be limited to migration for coho salmon (Sonoma Water and California Sea Grant, 2019).

Steelhead (*Oncorhynchus mykiss irideus*, Central California Coast DPS pop.8) are listed as threatened under FESA and have a CDFW state rank of S2S3. Steelhead are found in the Russian River, and south to Soquel Creek and to, but not including the Pajaro River. They are also present in San Francisco and San Pablo Bay basins. Steelhead are anadromous fish that spend part of their life cycle in freshwater and part in salt water. This species spawns in small, freshwater streams where the young remain from one to several years before migrating to the ocean to feed and mature. Adults return to their natal streams to spawn and complete their life cycle (National Marine Fisheries Service, 2016b).

The Russian River and Dutch Bill Creek are known spawning and rearing streams for steelhead. Both the mature adults and young of the year are regularly observed within the Russian River and Dutch Bill Creek through the Coastal Monitoring Program implemented by Sonoma Water and California Sea Grant (funded by the CDFW). The Russian River and Dutch Bill Creek were designated as critical habitat for this species in September 2005 (National Marine Fisheries Service, 2005); therefore, the portions of the Russian River and Dutch Bill Creek in the BSA are considered steelhead critical habitat.

The lower reaches of Dutch Bill Creek and the Russian River have been highly disturbed by the construction of dams and urbanization. The rearing and spawning habitat in the lower Russian River watershed (from Cloverdale downstream to Monte Rio) exceeds the thermal tolerances for spawning and rearing salmonids (National Marine Fisheries Service, 2008). Therefore, spawning and rearing are expected to be limited to the upper reaches of Dutch Bill Creek and the Russian River, although steelhead are expected to spawn lower in Dutch Bill Creek than coho. Stream conditions are favorable to steelhead migration within the BSA, including suitable water quality. Therefore, the portions of the Russian River and Dutch Bill Creek within the BSA are expected to be limited to migration for steelhead (Sonoma Water and California Sea Grant, 2019). Adult steelhead migrate from the ocean to freshwater streams beginning in December and continue to March. Steelhead spawning typically begins in January and continues through mid-April.

Chinook salmon (*Oncorhynchus tshawytscha* California coastal ESU pop. 17) is listed as threatened under FESA and is considered state rank S1 species (critically imperiled – extreme rarity [often five or fewer occurrences] or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from California) by the CDFW. The Chinook salmon is found in freshwater streams and migrating as juveniles downstream to the ocean to grow and mature. The

California coastal chinook salmon ESU includes all naturally spawned populations of Chinook salmon from rivers and streams south of the Klamath River to the Russian River.

The Russian River is a known spawning and rearing habitat for Chinook salmon. Mature adults are regularly observed within the Russian River through the Coastal Monitoring Program. The Russian River was designated as critical habitat for this species in September 2005 (National Marine Fisheries Service, 2005); therefore, the portions of the Russian River in the BSA are considered Chinook salmon critical habitat.

The lower reaches of the Russian River have been highly disturbed by the construction of dams and urbanization. The rearing and spawning habitat in the lower Russian River watershed (from Cloverdale downstream to Monte Rio) exceeds the thermal tolerances for spawning and rearing salmonids (National Marine Fisheries Service, 2008). Therefore, spawning and rearing are expected to be limited to the upper reaches of the Russian River. However, stream conditions are favorable to Chinook salmon migration within the BSA, including suitable water quality. Therefore, the portions of the Russian River within the BSA are expected to be limited to migration for Chinook salmon (Sonoma Water and California Sea Grant, 2019). Adult Chinook salmon typically begin migrating from the ocean to freshwater streams in August and continuing through January. Chinook salmon spawning typically begins in late October or early November and continues through mid-March.

Amphibians

California giant salamander (*Dicamptodon ensatus*) is listed as a SSC by the CDFW. The California giant salamander is found in or near streams within humid coastal forests, especially in Douglas fir, redwood, red fir, and montane and valley foothill riparian habitats. The species' range is known from Mendocino County south to Monterey County, and east to Napa County.

Aquatic adults and larvae are found in cold, clear rocky streams, and occasionally in lakes and ponds. Terrestrial adults are found under surface litter, underground tunnels, wet forests under rocks and logs, and near streams and lakes. There are multiple known locations for this species within 5 miles of the BSA, including within Dutch Bill Creek, approximately 3 miles from the Project site (CDFW, 2021a). Although no California giant salamanders were observed during biological surveys conducted for the Project, there is suitable riparian and aquatic habitat in the BSA and there is potential for this species to occur.

Foothill yellow-legged frog, (*Rana boylei*) is listed by CDFW as SSC. The foothill yellow-legged frog is divided into six clades in the state of California. The project area is within the north/northwest clade range. On March 10, 2020, the California Fish and Game Commission (Commission) made a finding pursuant to California Fish and Game Code Section 2075.5, in response to a petition to list the foothill yellow-legged frog as threatened or endangered under the CESA. In the finding, the Commission found the listing of the northwest/north coast clade is not warranted at this time (California Fish and Game Commission, 2020). Therefore, although this population is considered a SSC, it is not listed as endangered or threatened under the CESA within the BSA.

The foothill yellow-legged frog is found in partly shaded, shallow streams and riffles with rocky substrate in a variety of habitats. Individuals seek cover under rocks in streams or on shore within a

few feet of water. This species is rarely encountered (even on rainy nights) far from permanent water. The foothill yellow-legged frog requires cobble-sized substrate for egg-laying and needs at least 15 weeks to attain metamorphosis.

Although no foothill yellow-legged frogs were observed during biological surveys conducted for the Project, they are known to occur in Dutch Bill Creek, with the closest occurrence approximately 0.3 miles upstream from the Project site (CDFW, 2021a). Additional known occurrences are located approximately 2 miles west on Austin Creek. There is suitable woodland and riparian habitat in the BSA; therefore, there is potential for this species to be at the Project site.

Red-bellied newt, (*Taricha rivularis*) is listed as an SSC by the CDFW. The red-bellied newt is found in broadleaved upland forests, north coast coniferous forests, redwoods, riparian forests, and riparian woodlands. It lives in terrestrial habitats, juveniles generally underground, adults active at the surface in moist environments. Typically, this species will breed in permanent streams with rapid flow and clean, rocky substrate. They will migrate over 0.5 mile to breed. This species is often found in coastal drainages from Humboldt County south to Sonoma County, inland to Lake County. No red-bellied newts were observed during the biological surveys conducted for the Project and there no recorded occurrences within 5 miles of the BSA (CNDDDB) (CDFW, 2021a). However, there is suitable woodland and riparian habitat in the BSA; therefore, there is potential for this species to occur.

Reptiles

Western pond turtle (*Emys marmorata*) is a designated as a SSC by the CDFW. This species is a fully aquatic turtle found in slow moving rivers, streams, lakes, ponds, wetlands, reservoirs, brackish estuarine waters, and irrigation ditches. The western pond turtle prefers areas that provide logs, algae, or vegetation for cover, and boulders for basking. The western pond turtle requires well vegetated upland refuge sites to escape predators or high-water levels. Nesting habitat for this species is generally along south-facing slopes within five to 100 meters of water. This species is generally found below 6,000 feet elevation. No western pond turtles were observed during biological surveys, however, they are known to occur in the lower Russian River, with multiple occurrences documented between Guerneville and Jenner (CDFW, 2021a).

Mammals

Pallid bat (*Antrozous pallidus*) is listed as an SSC by the CDFW. The pallid bat is found year-round in a variety of low-elevation habitats in most parts of California, including grasslands, shrublands, woodlands, and forests. This species is thought to prefer open, dry habitats with rocky areas for roosting. The pallid bat day roosts in caves, crevices, mines, and hollow trees, buildings, and bridges, and night roosts in more open sites, such as porches, open buildings, and bridges. Roosts must protect bats from high temperatures, and this species will move deeper into cover if temperatures rise. The pallid bat is highly sensitive to disturbance. No pallid bats were observed during biological surveys conducted for the project and there are no recorded occurrences within 5 miles of the BSA (CDFW, 2021a). However, there is suitable roosting and foraging habitat on the bridge and in trees within the BSA; therefore, there is potential for this species to occur.

Western red bat (*Lasiurus blossevillii*) is listed as an SSC by the CDFW. The western red bat roosts in forests and woodlands from sea level up through mixed conifer forests. This species roosts primarily in trees, sometimes shrubs; roost sites often are in edge habitats adjacent to streams, fields, or urban areas. This species forages over a wide variety of habitats including grasslands, shrublands, open woodlands and forests, and croplands. No western red bats were observed during biological surveys conducted for the Project and there are no recorded occurrences within 5 miles of the BSA (CDFW, 2021a). However, there is suitable roosting and foraging habitat in the riparian habitat along Dutch Bill Creek in the BSA; therefore, there is potential for this species to occur.

Hoary Bat (*Lasiurus cinereus*) is listed on the CDFW Special Animals list as S4. The hoary bat is found in a wide variety of habitats and elevations in California. This species generally roosts in dense foliage of medium to large trees, and prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. No hoary bats were observed during biological surveys conducted for the Project although there is a historical occurrence near Guerneville from 1913 (CDFW, 2021a). However, there is suitable roosting and foraging habitat in the BSA; therefore, there is potential for this species to occur.

Nesting Birds

While non-game migratory bird species are not rare and therefore are not Special Status Species, they are protected under the California Fish and Game Code (CFGC) Section 3503 have the potential to breed throughout the BSA. Native avian species common to, riparian, grasslands, landscaping, developed and ruderal areas have the potential to breed and forage throughout the BSA. Species of birds common to the Project area protected by CFGC code, and observed during biological surveys and site assessments include cliff swallow (*Petrochelidon pyrrhonota*) mallard duck (*Anas platyrhynchos*); great blue heron (*Ardea Herodias*); Brewer's blackbird (*Euphagus cyanocephalus*); American crow (*Corvus brachyrhynchos*) and turkey vulture (*Cathartes aura*) as observed during biological site assessments and surveys. Nesting by these and a variety of non-game birds protected by CFGC Section 3503 could occur throughout the BSA.

Additional special-status species potentially occurring in the BSA are described below.

Great blue heron (*Ardea Herodias*) is a species on the CDFW Special Animals list with a state rank of S4. The great blue heron nests colonially in tall trees, cliff sides, and sequestered spots on marshes. This species forages in marshes, lake margins, tide flats, rivers, streams, and wet meadows. The rookery sites are near foraging areas. Colonies need to be protected from human disturbances, which often cause nest desertion. The closest recorded rookery (nest site) is located near Duncan's Mills, west of the Project site (CDFW, 2021a). The nesting habitat typically preferred by this species is absent from the BSA; however, there is suitable foraging habitat in the BSA. This species was observed foraging during the biological surveys.

Bald eagle (*Haliaeetus leucocephalus*) is listed as endangered under the CESA. This species is found in old growth and lower montane coniferous forests along ocean shore, lake margins, and rivers for both nesting and wintering. The bald eagle nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Most nests are typically within one mile of a water source with abundant fish. Bald eagles require large bodies of water or free flowing rivers with fish and adjacent snags or other hunting perches. This species roosts communally in winter. No bald eagles were observed during the biological surveys conducted for this project and there is no

suitable nesting habitat in the BSA. However, there is suitable foraging habitat within the BSA; therefore, there is potential for this species to forage, but it is not expected to nest in the BSA.

Yellow-breasted chat (*Icteria virens*) is listed as an SSC by the CDFW. The yellow-breasted chat is found in riparian forests, riparian scrub, and riparian woodlands. The yellow-breasted chat nests in low, dense riparian thickets near water courses, consisting of willow, blackberry, and wild grape. The species forages and nests within 10 feet of the ground. No yellow-breasted chats were observed during biological surveys conducted for the project. However, there is suitable nesting and foraging habitat within the BSA; therefore, there is potential for this species to be in the BSA.

Osprey (*Pandion haliaetus*) is a species on the CDFW Special Animals List with a state rank of S4. The osprey is found along ocean shore, bays, fresh-water lakes, and riparian forest along larger streams. This species builds large nests in treetops within 15 miles of a good fish-producing body of water. Ospreys require nest sites in open surroundings for an easy approach, with a wide, sturdy base, and safety from ground predators. An osprey's diet consists of mostly fish. This species will fly over water and dive feet first to grasp a fish. There are known nest locations along the Russian River, near Guerneville and Duncans Mills (CDFW, 2021a). However, the nesting habitat typically preferred by this species is absent from the BSA; although there is suitable foraging habitat in the BSA. This species was observed flying within the BSA during the biological surveys.

Double-crested cormorant (*Phalacrocorax auritus*) is a species on the CDFW Special Animals List with a state rank of S4. The double-crested cormorant is found in riparian forests, riparian scrub, and riparian woodlands. This species is a colonial nester that requires undisturbed nest sites beside water on coastal cliffs, offshore islands, and along lake margins in the interior of the state. The species uses wide rock ledges, rugged slopes, and live or dead trees (preferentially tall ones). The double-crested cormorant feeds on fish and other aquatic life near the mid to upper levels of the water. Known nesting sites near the mouth of the Russian River in Jenner (CDFW, 2021a). However, the nesting habitat typically preferred by this species is absent from the BSA, although there is suitable foraging habitat in the BSA. This species was observed flying in the BSA during the biological surveys.

Critical Habitat

Designated critical habitats occur within BSA for Coho salmon – central California coast Evolutionarily Significant Unit (ESU), Steelhead – central California DPS, and Chinook salmon – California coastal ESU, as described below.

Central California Coast Coho Salmon Final critical habitat for the CCC coho salmon population was designated by NMFS on May 5, 1999 (National Marine Fisheries Service, 1999). Critical habitat for CCC coho salmon was delineated based on several physical and biological features including water, substrate, and adjacent riparian zone of reaches in designated hydrologic units, including the Russian River. In the action area, there is suitable water quantity and quality conditions, substrate, and riparian habitat along the banks. Therefore, the portion of the Russian River in the action area is within designated CCC coho salmon critical habitat.

Central California Coast Steelhead Final critical habitat for the CCC steelhead population was designated by NMFS on September 2, 2005 (National Marine Fisheries Service, 2005). Critical

habitat for steelhead is delineated based on various physical and biological features. In the action area, there are freshwater migration corridors with suitable water quantity and quality conditions, and natural cover including overhanging vegetation, large rocks and boulders, and undercut banks that support juvenile and adult mobility and survival. Therefore, the portions of the Russian River and Dutch Bill Creek in the action area is within designated CCC steelhead critical habitat.

California Coastal Chinook Salmon Final critical habitat for the CC Chinook salmon population was designated by NMFS on September 2, 2005 (National Marine Fisheries Service, 2005). Critical habitat for CC Chinook salmon is delineated based on various physical and biological features. In the action area, there are freshwater migration corridors with suitable water quantity and quality conditions, and natural cover including overhanging vegetation, large rocks and boulders, and undercut banks that support juvenile and adult mobility and survival. Therefore, the portions of the Russian River and Dutch Bill Creek in the action area is within designated CCC Chinook salmon critical habitat.

Jurisdictional Waters and Wetlands

Potentially jurisdictional areas in the BSA include the Russian River and Dutch Bill Creek and associated riparian areas. These features are potentially subject to U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and CDFW oversight. Figure 4.4-3 depicts waters of the U.S. and waters of the state potentially under USACE and RWQCB jurisdictions and Figure 4.4-4 depicts potential CDFW jurisdictional areas. There are potentially a total of 2.23 acres of waters of the U.S./state and 6.78 acres of CDFW jurisdictional habitat. Jurisdictional areas will be verified with the USACE, RWQCB, and CDFW during the regulatory permitting process. Table 4.4-3 lists the area and linear feet of waters of the U.S. and state potentially under the jurisdiction of USACE and RWQCB and CDFW.

Figure 4.4-3 Potential United States Army Corps of Engineers and Regional Water Quality Control Board Jurisdiction

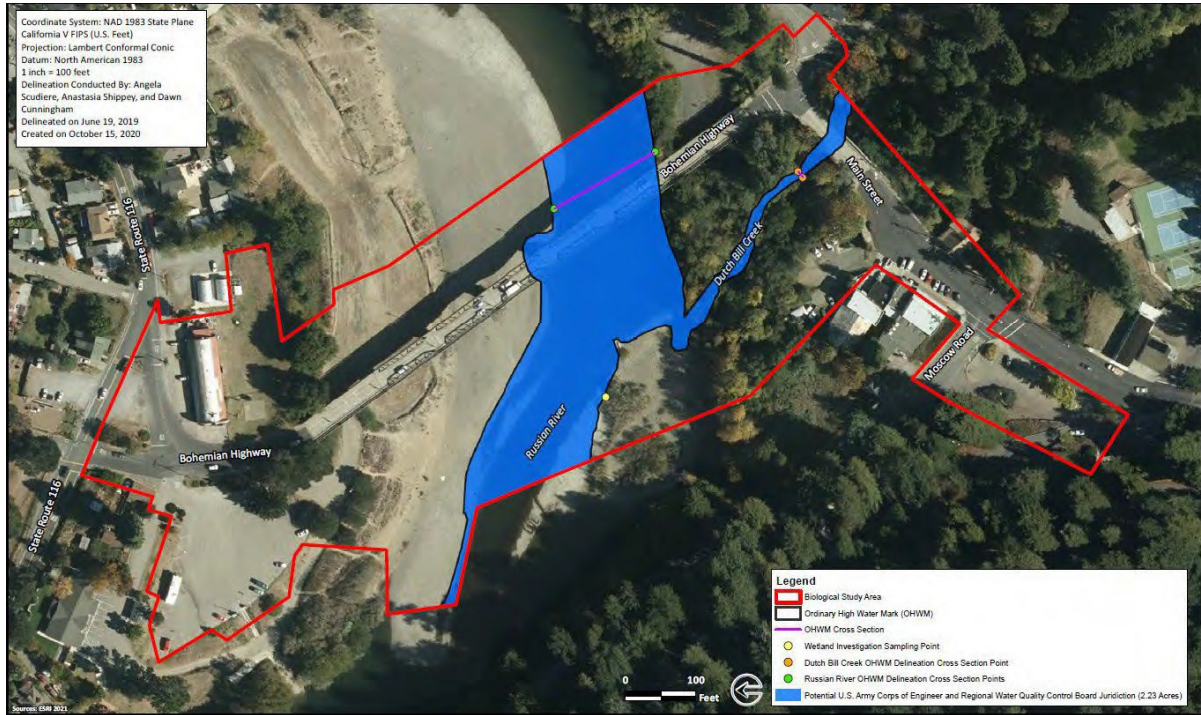


Figure 4.4-4 Potential California Department Fish and Wildlife Jurisdiction



Table 4.4-3 Potential waters of the U.S/State and CDFW Jurisdictional Areas

| Feature | Waters of the US/Waters of The State (Acres) | CDFW (Acres) | Linear Feet |
|--------------------------------|--|--------------|-------------|
| Russian River/Dutch Bill Creek | 2.23 | 6.78 | 845 |

4.4.2 Regulatory Setting

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

a. Federal

Federal Endangered Species Act (FESA)

FESA establishes a broad public and federal interest in identifying, protecting, and providing for the recovery of threatened or endangered species. The Secretary of Interior and the Secretary of Commerce are designated in FESA as responsible for identifying endangered and threatened species and their designated critical habitat, carrying out programs for the conservation of these species, and rendering opinions regarding the impact of proposed federal actions on listed species. The USFWS and the National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NMFS) are charged with implementing and enforcing the FESA (16 USC Section 1531). USFWS has authority over terrestrial and continental aquatic species, and NMFS has authority over species that spend all or part of their life cycle at sea, such as salmonids.

Section 9 of FESA prohibits the unlawful “take” of any listed fish or wildlife species. Take, as defined by FESA, means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such action.” USFWS’s regulations define harm to mean “an act which actually kills or injures wildlife.” Such an act “may include “significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering” (50 CFR § 17.3). Take can be permitted under FESA pursuant to sections 7 and 10.

Section 7 provides a process for take permits for federal projects or projects subject to a federal permit, requiring interagency consultation if there is a federal nexus. Section 10 provides a process for incidental take permits for projects proposed by private individuals, requiring the submittal of a Habitat Conservation Plan (HCP). The Section 7 consultation process, which applies to both listed animal and plant species, is designed to ensure that the federal agency action does not jeopardize the continued existence of a listed species or destroy or adversely modify its critical habitat. A HCP prepared under Section 10 outlines conservation measures to minimize the impacts of incidental take to listed species, including measures to maintain, enhance and protect the species’ habitat.

FESA does not extend the take prohibition to federally listed plants on private land, other than prohibiting the removal, damage, or destruction of such species in violation of state law.

The Migratory Bird Treaty Act of 1918 (MBTA)

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

The Clean Water Act (CWA)

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

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

Any applicant for a federal permit to impact waters of the U.S. under Section 404 of the CWA, including Nationwide Permits where pre-construction notification is required, must also provide to

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

Rivers and Harbors Act

Requires permits in navigable waters of the U.S. for all structures such as riprap and activities such as dredging. Navigable waters are defined as those that are subject to the ebb and flow of the tide and susceptible to use in their natural condition or by reasonable improvements as means to transport interstate or foreign commerce. The Russian River is considered a navigable water at the Monte Rio Bridge. USACE grants or denies permits based on the effects on navigation.

b. State

California Endangered Species Act (CESA)

Provisions of CESA protect state-listed threatened and endangered species. The California Endangered Species Act (CESA) (Fish and Game Code Section 2050 et. seq.) prohibits take of State-listed threatened or endangered. The CDFW is charged with establishing a list of endangered and threatened species. CDFW regulates activities that may result in “take” of a listed species (i.e., “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”). Habitat degradation or modification is not expressly included in the definition of “take” under the California Fish and Game Code (CFGF), but CDFW has interpreted “take” to include the killing of a member of a species that is the proximate result of habitat modification.

Fish and Game Code 1600-1602

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

Nesting Birds

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

Non-Game Mammals

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

California Fully Protected Species and Species of Special Concern

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

California Species of Special Concern (CSC) are broadly defined as animals not listed under the FESA or CESA, but which are nonetheless of concern to the CDFW because they are declining at a rate that could result in listing or because they historically occurred in low numbers and known threats to their persistence currently exist. This designation is intended to result in special consideration for these animals by the CDFW, land managers, consulting biologists, and others, and is intended to focus attention on the species to help avert the need for costly listing under FESA and CESA and cumbersome recovery efforts that might ultimately be required. This designation also is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known

at-risk species, and focus research and management attention on them. Although these species generally have no special legal status, they are given special consideration under the CEQA during project review.

Porter-Cologne Water Quality Control Act

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

C. Local

Sonoma County General Plan

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

The current Sonoma County General Plan contains the following goals, objectives and policies related to biological resources:

Goal OSRC-7: Protect and enhance the County's natural habitats and diverse plant and animal communities.

Objective OSRC-7.1: Identify and protect native vegetation and wildlife, particularly occurrences of special status species, wetlands, sensitive natural communities, woodlands, and areas of essential habitat connectivity.

Objective OSRC-7.5: Maintain connectivity between natural habitat areas.

Objective OSRC-7.6: Establish standards and programs to protect native trees and plant communities.

Objective OSRC-7.7: Support use of native plant species and removal of invasive exotic species.

Policy OSRC-7k: Require the identification, preservation and protection of native trees and woodlands in the design of discretionary projects, and, to the maximum extent practicable, minimize the removal of native trees and fragmentation of woodlands, require any trees removed to be replaced, preferably on the site, and provide permanent protection of other existing woodlands where replacement planting does not provide adequate mitigation.

Policy OSRC-7o: Encourage the use of native plant species in landscaping. For discretionary projects, require the use of native or compatible non-native species for landscaping where consistent with fire safety. Prohibit the use of invasive exotic species.

Goal OSRC-8: Protect and enhance Riparian Corridors and functions along streams, balancing the need for agricultural production, urban development, timber and mining operations, and other land uses with the preservation of riparian vegetation, protection of water resources, flood control, bank stabilization, and other riparian functions and values.

Objective OSRC-8.3: Recognize and protect riparian functions and values of undesignated streams during review of discretionary projects.

Policy OSRC-8d: Allow or consider allowing the following uses within any streamside conservation area:

(2) Streamside maintenance and restoration

(4) Road crossings, street crossings, utility line crossings

(11) Creekside bikeways, trails, and parks within Urban Residential, Commercial, Industrial, or Public-Quasi Public land use categories.

Sonoma County Municipal Code

The following discussion identifies local environmental regulations that serve to protect sensitive biological resources relevant to the CEQA review process.

Heritage or Landmark Trees, Tree Protection - The Sonoma County Code Section 26D, *Heritage or Landmark Trees*, provides standards for the removal, protection, and preservation of trees. The ordinance requires a tree permit for any heritage or landmark tree to be removed or damaged during project construction. In addition to requiring tree removal permits, the ordinance also requires measures to protect existing trees during project construction. Sonoma County Zoning Code Article 88, Section 26-88-010(m), *Tree Protection Ordinance*, requires projects to be designed to minimize the removal of protected trees that meet size and species criteria specified in the ordinance, and replanting for trees removed. While this ordinance is not applicable to County Public Works projects, it is used as a guide for determining impacts and appropriate mitigation measures.

Valley Oak Habitat Combining District - Additionally, Article 67, *Valley Oak Habitat Combining District*, of the Sonoma County Zoning Code provides for protection and enhancement of oak woodland habitats. Removal of oak trees in this zoning district requires mitigation measures including retention of other oaks, replacement plantings, and/or an in-lieu fee. While this portion of the zoning code is not applicable to County Public Works projects, it is used as a guide for determining impacts and appropriate mitigation measures.

Riparian Corridor Combining Zone - Riparian corridors are protected by Article 65, *Riparian Corridor Combining Zone*. This combining zone protects County-designated streams, including the bed, bank, and adjacent streamside conservation areas as measured from the top of bank or the outer drip line of the riparian trees. Specific setbacks are determined based on the affected river or stream and site-specific conditions but generally include a 25- to 200-foot setback. While this portion of the

zoning code is not applicable to County Public Works projects, it is used as a guide for determining impacts and appropriate mitigation measures.

Biotic Habitat (BH) Combining Zone - The BH combining zone is established to protect and enhance Biotic Habitat Areas for their natural habitat and environmental values and to implement the provisions of the General Plan Open Space and Resource Conservation Element, Area Plans and Specific Plans. Protection of these areas helps to maintain the natural vegetation, support native plant and animal species, protect water quality and air quality, and preserve the quality of life, diversity and unique character of the County. While this portion of the zoning code is not applicable to County Public Works projects, it is used as a guide for protecting Biotic Habitat Areas and for determining impacts and appropriate mitigation measures.

Sonoma County Bicycle and Pedestrian Plan

The Sonoma County Bicycle and Pedestrian Plan (SCBPP) establishes goals, objectives, policies and project priorities for the bicycle and pedestrian network in unincorporated areas of the County. The intent of the plan is to coordinate development of a seamless regional network that integrates with adjacent cities (Sonoma County 2010).

The SCBPP identifies a goal that encourages bicycle and pedestrian mobility throughout Sonoma County, and notes that people are most likely to choose walking in areas with high residential density and relatively short distances to schools, parks, shopping and jobs. With the unincorporated areas of Sonoma County, the SCBPP notes that these conditions are primarily found in Urban Service Areas. The project site is not located within an Urban Service Area.

4.4.3 Impact Analysis

a. Methodology and Significance Thresholds

Methodology

The analysis presented in this section is based on literature/database reviews. Project impacts to flora and are focused upon rare, threatened, endangered species, as defined under *CEQA Guidelines* Section 15380-

Significance Thresholds

The following threshold criteria, as defined by the *CEQA Guidelines* Appendix G Checklist, were used to evaluate potential environmental effects. Based on these criteria, the proposed Project would have a significant effect on biological resources if it would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service;

3. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Impacts on biological resources are evaluated based on the likelihood that special-status plant and animal species, special-status or sensitive natural communities, wildlife corridors, and other protected biological resources are present in the project area (as discussed in Section 4.4.1, “Environmental Setting”), and the likely effects that construction, operation, and maintenance of the Project may have on these resources. Sensitive biological resources that are considered unlikely or have a low potential to occur within the project area are not considered in the impact analysis (see Section 4.4.1).

b. Potential Project Impacts and Mitigation Measures

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

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

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

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

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

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

Impact BIO-1 THE PROPOSED PROJECT COULD HAVE A SUBSTANTIAL ADVERSE EFFECT, EITHER DIRECTLY OR THROUGH HABITAT MODIFICATIONS, ON SPECIES IDENTIFIED AS A CANDIDATE, SENSITIVE, OR SPECIAL-STATUS SPECIES. PROPOSED MITIGATION MEASURES WILL REDUCE IMPACTS TO LESS THAN SIGNIFICANT

Several special-status plant and wildlife species have the potential to occur within the project site (see Tables 4.4-1 and 4.4-2). Direct impacts could occur as a result of removal or disturbance of suitable habitat during construction which, in turn, could result in disturbance, injury, or mortality of individual animals or plants. Indirect impacts, which generally include those that occur later in time as a result of maintenance and operation activities but that are reasonably foreseeable, can include disturbance to on-site habitats and wildlife within and in the vicinity of the Project site.

The following section describes more specifically the direct and indirect impacts that could potentially occur as a result of construction and/or operation and maintenance of the proposed bridge and removal of the existing bridge to those special-status plant and wildlife species identified as occurring or potentially occurring within the project site.

Potential Impacts to Special-Status Plant Species

As discussed in Section 4.4.1, and listed in Table 4.4-1, several special-status plant species including Sonoma alopecurus, bristly sedge, western leatherwood, two-fork clover, and congested-headed tarweed have a very low to moderate potential to occur. However, none of these species or any other special-status plant species were observed during biological reconnaissance surveys conducted in 2019 or rare plant surveys conducted during 2021. Given negative results of rare plant surveys in 2021, as well as the high level of historical disturbance at the site from past construction and demolition of bridges, no direct or indirect impacts to special-status plants are expected as a result of the Project. In addition, with Mitigation Measures BIO-1 (General Mitigation Measures); BIO-2 (Erosion and Sediment Control); BIO-3 (Accidental Spill and Pollution Prevention); BIO-4 (Riparian Habitat Replacement); BIO-5 (Special-status Plant Mitigation) and BIO-6 (Prevention of Invasive Species Spread) any potential impacts would be less than significant.

Potential Impacts to Special-Status Wildlife Species

As discussed in Section 4.4.1, and discussed in Table 4.4-2, special-status wildlife species potentially affected by the project include: Crotch bumble bee, western bumble bee, western ridged mussel, Pacific lamprey, Russian River tule perch, Navarro roach, hardhead, Central California Coast coho salmon, Central Coast California District Population Segment (DPS) steelhead, California coastal Chinook salmon, central California giant salamander, foothill yellow legged frog, red bellied newt, western pond turtle, great blue heron, bald eagle, yellow-breasted chat, osprey, double-crested cormorant, pallid bat, western red bat, and hoary bat. Potential impacts to special-status wildlife are discussed below.

Invertebrates

Although there are no current records documenting their presence, Crotch bumble bee, western bumble bee, and western ridged mussel are possible inhabitants of the BSA. Mitigation measures that avoid, minimize and mitigate for impacts to terrestrial and aquatic habitats listed below will provide the necessary mitigation measures for these potential terrestrial and aquatic invertebrates, if present, as well. These include Measures **BIO-1** (General Mitigation Measures); **BIO-2** (Erosion and Sediment Control); **BIO-3** (Accidental Spill and Pollution Prevention); **BIO-4** (Riparian Habitat Replacement); **BIO-5** (Special-status Plant Mitigation); **BIO-6** (Prevention of Invasive Species Spread); **BIO-7** (Salmonids and Special Status Fish Mitigation); **BIO-11** (Waters of the U.S./Waters of the State and CDFW Jurisdictional Areas); **BIO-12** (Sensitive Natural Communities); and **BIO-13** Critical Habitat and Essential Fish Habitat. With implementation of these measures, any potential impacts would be less than significant.

Fisheries, including Coho Salmon, Steelhead, and Chinook Salmon

Central California Coast Coho salmon, Central Coast California District Population Segment (DPS) steelhead, and California coastal Chinook salmon are known to occur within the BSA in addition to other special-status fish species which are either known to occur or may occur, including Pacific lamprey, Russian River tule perch, Navarro roach, and hardhead.

Construction of the project could result in direct impacts on coho salmon, steelhead, or Chinook salmon or other special-status fish known or potentially occurring within the BSA should an individual be present during in-water work. A temporary water diversion structure and work platform are required in the Russian River for construction of the replacement bridge and demolition of the existing bridge. A water diversion structure may also be required at the mouth of Dutch Bill Creek, should water be present at the time of construction. The existing bridge piers would be wholly or partially removed and cut below grade, and may require isolation of the pier prior to removal, followed by dewatering to minimize impacts to water quality. The work pad construction and temporary water diversion and pier isolation may require the implementation of a fish capture and relocation plan, which could have direct impacts on special-status fish, including Coho salmon, steelhead, and Chinook salmon, if present. Construction of the Project also includes removal a remnant (pre-1934) bridge pier footing, which would improve habitat and migration conditions by reducing obstructions for fisheries.

Overall, the proposed bridge's clear span design will minimize permanent impacts by limiting new construction in the river channel. The project will also provide a benefit to fisheries habitat by removal of the existing bridge piers and the pre-1934 remnant bridge pier footing obstructions from the Russian River's low flow channel.

The Project has been designed to avoid and minimize impacts on special-status fish, including Coho salmon, steelhead, Chinook salmon. However, because in-water work is anticipated, the project may result in take (harm, harass or mortality) of Coho salmon, steelhead, and/or Chinook salmon; therefore, the project may affect, and is likely to adversely affect, Coho salmon, steelhead, and Chinook salmon. A project Biological Assessment (BA) was prepared and Caltrans, as the delegated lead federal agency, submitted it to NMFS to initiate Section 7 consultation of the Federal Endangered Species Act consultation on May 5, 2021 and the Biological Opinion (BO) was completed on January 31, 2022, and includes measures to reduce impacts to listed salmonids. Coordination

between Caltrans, County and NMFS resulted in agreement to fund a fisheries restoration project within Dutch Bill Creek as part of the project, as described in Section 2.6

Potential impacts to salmonids and special-status fish species would be reduced to less than significant with the implementation of mitigation measures listed below, together with the:

- Proposed Project funding for a restoration project within Dutch Bill Creek, as approved by NMFS during the Section 7 consultation process (see Section 2.6);
- Proposed Project activities that would improve and benefit fisheries habitat within the BSA, including the removal of the existing bridge's in-channel piers, and removal of the pre-1934 bridge remnant pier footing.

Mitigation Measures that would avoid, minimize and mitigate for fisheries include: **BIO-1** (General Mitigation Measures); **BIO-2** (Erosion and Sediment Control); **BIO-3** (Accidental Spill and Pollution Prevention); **BIO-4** (Riparian Habitat Replacement); and **BIO-7** (Salmonids and Special Status Fish Mitigation); **BIO-11** (Waters of the U.S./Waters of the State and CDFW Jurisdictional Areas); **BIO-12** (Sensitive Natural Communities); and **BIO-13** Critical Habitat and Essential Fish Habitat .

Coho Salmon, Steelhead, and Chinook Salmon Designated Critical Habitat and Essential Fish Habitat (EFH) for Coho and Chinook

Construction materials, dust, and debris could result in temporary direct impacts on Coho salmon, steelhead, and Chinook salmon designated critical habitat waters and Essential Fish Habitat (EFH) for Coho and Chinook if materials were to enter flowing water within the Russian River or Dutch Bill Creek during bridge construction, bridge removal, and bank and channel re-establishment efforts. In addition, installation of a temporary water diversion in the Russian River (and potentially at the mouth of Dutch Bill Creek, if water is present), and removal of the existing bridge piers and pre-1934 remnant bridge pier footing, could result in temporary direct impacts to the riverbed. The existing bridge piers would be wholly or partially removed, potentially cut approximately four feet below grade, which could result in temporary indirect impacts on Coho salmon, steelhead, and Chinook salmon critical habitat. In addition, temporary indirect impacts on Coho salmon and steelhead critical habitat include the removal of overhanging vegetation along the banks of Dutch Bill Creek and installation of a bridge pier on the western bank of Dutch Bill Creek outside of the low flow channel. After construction, the Russian River and Dutch Bill Creek channels would be restored to previous contours, to the extent feasible.

Removal of the existing bridge piers and removal of the pre-1934 remnant bridge pier footing from the Russian River could benefit Coho salmon, steelhead, and Chinook salmon critical habitat and EFH, by removing artificial structures from the river by allowing more natural fluvial process to return to the system. Additionally, the construction of the new bridge would clear span the low flow channel of the Russian River and construction activities within the Russian River and Dutch Bill Creek would be temporary.

With the design elements, discussed above, implemented for salmonid and special-status fish species, impacts on Coho salmon, steelhead, and Chinook salmon critical habitat would be less than significant.

Amphibians and Reptiles

Although no special-status amphibians or reptiles were observed during Project biological surveys, four species are known to occur or have the potential to occur with the BSA, including central California giant salamander, foothill yellow legged frog, red bellied newt, and western pond turtle.

Construction activities, such as vegetation removal, grading, and bank stabilization, could directly impact special-status amphibians and reptiles should they be in the construction area and be trampled or crushed by vehicles or equipment. In addition, earthwork, vegetation removal, installation of water diversions, and demolition activities within riparian habitat of the Russian River and Dutch Bill Creek could result in temporary impacts on breeding, upland, and dispersal habitat suitable for special-status amphibians. This temporary loss in habitat could result in an indirect impact on special-status amphibian and reptile species, should they be in the construction area. To accommodate the replacement bridge abutments and piers, the project would result in the permanent removal of a small amount of riparian habitat on the banks of Dutch Bill Creek, which may provide potential suitable habitat for special-status amphibians and reptiles. This permanent loss in potential habitat could result in an indirect impact on special-status amphibian and reptile species.

However, with the mitigation measures listed below, potential impacts to special-status amphibians and reptiles would be less than significant. These include **BIO-1** (General Mitigation Measures); **BIO-2** (Erosion and Sediment Control); **BIO-3** (Accidental Spill and Pollution Prevention); **BIO-4** (Riparian Habitat Replacement); **BIO-5** (Special-status Plant Mitigation) and **BIO-6** (Prevention of Invasive Species Spread); **BIO-7** (Salmonids and Special Status Fish Mitigation); **BIO-8** Amphibians and Reptiles Mitigation; **BIO-11** (Waters of the U.S./Waters of the State and CDFW Jurisdictional Areas); **BIO-12** (Sensitive Natural Communities) and **BIO-13** Critical Habitat and Essential Fish Habitat. With implementation of these measures, any potential impacts to amphibian and reptiles would be less than significant.

Sensitive Bat Species

Although no bat or bat sign was observed during biological surveys, and there is limited (one historical occurrence) documentation of bats near the Project site, there is potential habitat for pallid bat, western red bat, and hoary bat within the BSA.

Construction activities could directly impact bats if they were roosting in vegetation removed during construction. In addition, cliff swallow nests on the existing bridge could potentially serve as bat day roost sites and removal of these nests could directly impact bats if they were to be roosting during construction. Noise and vibration disturbance could impact bats if they were roosting in trees immediately adjacent to construction activities.

The replacement bridge and roadway approaches could result in permanent loss of riparian habitat, which may provide potential roosting and foraging habitat for bats. This permanent loss of habitat could result in indirect impacts on special-status bat species, should they be present in the construction area. However, there is no bat roosting habitat in the existing structure, so there would be no permanent loss of a known roosting site.

However, with implementation of the proposed mitigation measures listed below, potential impacts would be less than significant. These include Measure **BIO-1** (General Mitigation Measures); **BIO-4** (Riparian Habitat Replacement); **BIO-9** (Mitigation for Bats); **BIO-10** (Mitigation for Migratory Birds) and **BIO-12** (Sensitive Natural Communities). With implementation of these measures, any potential impacts to bats would be less than significant.

Birds

Special-status bird species that have the potential to occur within the BSA include great blue heron, bald eagle, yellow-breasted chat, osprey, double-crested cormorant. With the exception of yellow-breasted chat, habitat for the special-status bird species listed above is limited to foraging only; there is no potential nesting habitat for great blue herons, bald eagle, osprey or double-crested cormorant. However, there is potential nesting and foraging habitat for common bird species protected by migratory birds protected under the federal Migratory Bird Treaty Act, including cliff swallows, which are known to nest under the existing bridge.

Construction of the new bridge and demolition of the existing bridge could result in temporary and permanent impacts on special-status bird species, should they be in the construction area. Construction activities such as vegetation removal and work on the bridge structure, including structure demolition, could directly impact migratory birds and raptors if these activities are conducted while birds are nesting within or adjacent to the affected areas. Temporary noise generating activities, bridge demolition, and road construction, could result in temporary indirect impacts on nesting birds and raptors if loud enough to result in disturbance. In addition, construction activities could temporarily disrupt foraging in the construction area.

The new bridge and roadway approaches could result in permanent loss of riparian habitat, which may provide potential nesting and foraging habitat for special-status birds. This permanent loss of habitat could result in indirect impacts on special-status bird species. However, with implementation of the proposed avoidance and minimization measures listed below, potential impacts would be less than significant. These include Measure **BIO-1** (General Mitigation Measures); **BIO-4** (Riparian Habitat Replacement); **BIO-9** (Mitigation for Bats); **BIO-10** (Mitigation for Migratory Birds); **BIO-10** (Mitigation for Special-Status and Migratory Birds); and **BIO-12** (Sensitive Natural Communities). With implementation of these measures, any potential impacts to bats would be less than significant.

MITIGATION MEASURES

BIO -1 General Mitigation Measures

The following general mitigation measures shall be implemented:

- A worker environmental awareness training (WEAT) conducted by a qualified biologist will be conducted to educate any onsite personnel expected to be onsite for 30 minutes or more about special-status wildlife species and their habitat within the Project area. The WEAT shall instruct workers on how to recognize potentially occurring special-status plant/wildlife species and their preferred habitat potentially present in the project site, applicable laws and regulations regarding each species, actions to take if a special-status species is observed during construction activities including the name/contact information of the monitoring biologist, and the nature and purpose of protective measures including best
-

management practices (BMPs) and other required mitigation measures. The WEAT shall including information about sensitive resource areas (including wetlands and waters of the U.S/state), to avoid within the Project site other than where impacts have been authorized, and relevant laws and regulations for each resource.

- Preconstruction surveys will be conducted by a qualified biologist for any sensitive species and those individuals will be relocated to nearby habitat (if deemed appropriate by the biologist). The biologist shall be on-site during all construction events to ensure that sensitive species are avoided to the maximum extent practicable to minimize potential harmful effects.
- To protect the riparian plant community, the limits of work areas will be designated with ESA fencing or flagging materials and will be reduced to the extent feasible.
- Vegetation removed would be limited to the extent possible and would follow Caltrans Standard Specifications for Clearing and Grubbing and Roadside Clearing.
- All project-related vehicle traffic would be restricted to established roads and construction areas, which include equipment staging, storage, parking, and stockpile areas.
- All project-related vehicle traffic would be restricted to 5 miles per hour within all work areas.
- No pets would be allowed in the construction area, to avoid and minimize the potential for harassment, injury, and death of wildlife.
- Nighttime construction would only be authorized by the County for select activities on a case-by-case basis, such as a bridge pour, in coordination with a qualified biologist.

Bio 2 - Erosion And Sediment Control Mitigation Measures

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

- BMPs, such as silt fencing, fiber rolls, and straw bales, shall be implemented prior to ground disturbance and during construction of the proposed project to minimize dust, dirt, and construction debris from entering the waterways and/or leaving the construction area.
- Activities that increase the erosion potential in the project area shall be restricted to the relatively dry summer and early fall period to minimize the potential for rainfall events to transport sediment to surface water features. In channel waterway construction will be conducted from June 15-October 15, or until the start of the wet season as stipulated by the regulatory permitting agencies. Upland construction will likely occur throughout the year as long as work activities comply with the BMPs and mitigation measures identified herein for

the protection of sensitive or special-status plant or animal species. For upland construction activities that must take place during the late fall, winter, or spring, then temporary erosion and sediment control structures shall be in place and operational at the end of each construction day and maintained until permanent erosion control structures are in place.

- At completion of each construction season and in those areas where subsequent ground disturbance will not occur for 10 calendar days or more, weed-free mulch shall be applied to disturbed areas to reduce the potential for short-term erosion. Prior to a rain event or when there is a greater than 50 percent possibility of rain within the next 24 hours, as forecasted by the National Weather Service, weed-free mulch shall be applied to all exposed areas upon completion of the day's activities. Soils shall not be left exposed during the rainy season.
- Suitable BMPs, such as silt fences, straw wattles, or catch basins, shall be placed below all construction activities at the edge of surface water features to intercept sediment before it reaches the waterway. These structures shall be installed prior to any clearing or grading activities. Further, sediment built up at the base of BMPs will be removed before BMP removal to avoid any accumulated sediments from being mobilized post-construction
- All dewatering activities will be conducted in compliance with the Caltrans Field Guide for Construction Site Dewatering and Section 13-4.03G of the Caltrans Standard Specifications. Water removed from the excavated area for pier and abutment footings or construction shall be pumped to a temporary sediment retention basin outside of the channel, through a mechanized water filtration system, into baker tanks or similar storage system or trucked offsite to an authorized disposal site. If a temporary basin is constructed, it shall be located outside of the active channel and include sediment sock or similar sediment control on the discharge.
- If spoil sites are used, they shall be located such that they do not drain directly into a surface water feature, if possible. If a spoil site drains into a surface water feature, catch basins shall be constructed to intercept sediment before it reaches the feature. Spoil sites shall be graded and vegetated with native species, or covered by other means to reduce the potential for erosion.
- Sediment control measures shall be in place prior to the onset of the rainy season typically October 15th and will be monitored and maintained in good working condition until disturbed areas have been stabilized with mulch, or other erosion control materials.

BIO-3: Accidental Spill and Pollution Prevention Mitigation Measures

Appropriate hazardous material BMPs would be implemented to reduce the potential for chemical spills or contaminant releases into the waterways, including any non-storm water discharge. Construction specifications shall include the following measures to reduce potential impacts to vegetation and aquatic habitat resource in the project area associated with accidental spills of pollutants (e.g., fuel, oil, asphalt and grease):

- A site-specific spill prevention plan shall be prepared, approved by the County and implemented for potentially hazardous materials. The plan shall include the proper handling

and storage of all potentially hazardous materials, as well as the proper procedures for cleaning up and reporting any spills. If necessary, containment berms shall be constructed to prevent spilled materials from reaching surface water features

- Where feasible, equipment and hazardous materials shall be stored at least 50 ft. away from water features
- All equipment refueling and maintenance would be conducted in the upland staging area a minimum of 50 feet from the top of bank Russian River and Dutch Bill Creek. In addition, vehicles and equipment would be checked daily for fluid and fuel leaks, and drip pans of absorbent material would be placed under all equipment within 50 feet of the flowing water of the Russian River and Dutch Bill Creek that is parked and not in operation. Leaking vehicles or equipment would not be operated until repaired. All workers would be informed of the importance of preventing spills and the appropriate measures to take should a spill happen.
- When feasible, equipment operating below the top of bank shall use non-toxic vegetable oil or similar non-toxic alternative for operating hydraulic equipment opposed to traditional hydraulic fluids that can contain a wide range of chemical compounds.
- Place plastic materials (or similar) under asphaltic concrete (AC) paving equipment while not in use, to catch and/or contain drips and leaks.
- During demolition of the existing road and bridge, all grindings and asphaltic-concrete (AC) waste would be immediately moved offsite or be temporarily stored onsite, above top of bank. If the waste is stored onsite, the waste would be placed on construction grade plastic sheeting, geotextile fabric, or similar impervious material, and would be stored a minimum of 50 feet from the top of bank of the Russian River or Dutch Bill Creek. AC grindings, pieces, or chunks used in embankments or shoulder backing must not be allowed to enter any storm drain or watercourses. Install silt fence until structure is stabilized or permanent controls are in place. On or before the date of project completion, the waste would be transported to an approved disposal site.
- Collect and remove all broken asphalt and recycle when practical, or as required by regulations; otherwise, dispose in accordance with Standard Specifications and to an appropriately permitted site. Surplus concrete rubble or pavement shall either be disposed of at an acceptable and legally permitted disposal site or taken to a permitted concrete and/or asphalt recycling facility.
- Use only non-toxic substances to coat asphalt transport trucks and asphalt spreading equipment.
- Do not allow Portland Concrete Cement (PCC) or slurry to enter storm drains or watercourses.
- No equipment, including concrete trucks, will be washed in a location where wash water could drain into surface waters.

- Any construction equipment operating upon work pads or adjacent to the Russian River or Dutch Bill Creek shall be inspected daily for leaks. External oil, grease, and mud shall be removed from equipment and disposed of properly. Spill containment booms shall be maintained onsite at all times during construction operations and/or staging of equipment or fueling supplies. Fueling trucks shall maintain adequate spill containment materials at all times. Any contaminated gravels on the work pad shall be removed from the site and disposed of in a permitted manner.
- The contractor shall develop and implement site-specific BMPs, a water pollution control plan, and emergency spill control plan. The contractor shall be responsible for immediate containment and removal of any toxins released.

BIO-4: Riparian Habitat Replacement

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

- When feasible, riparian vegetation will be trimmed rather than removed outright and/or be cut at grade to allow for stump re-sprouting.
- Prior to construction, high visibility Environmentally Sensitive Area (ESA) protective fencing would be installed per the plans, at the limits of construction to prevent construction staff or equipment from further encroaching on Russian River, Dutch Bill Creek, and the adjacent riparian habitat and ensure that impacts to riparian vegetation outside of the construction area are minimized. The exclusionary fencing shall be inspected and maintained on a regular basis throughout project construction.
- Riparian habitat areas temporarily disturbed shall be replanted using riparian species that have been recorded along the Russian River and Dutch Bill Creek areas, including species such as willow (*Salix exigua*, or *S. laevigata*), white alder, bay, big leaf maple, and Oregon ash.
- All nursery plants used in restoration will be inspected for sudden oak death prior to planting. Vegetation debris shall be disposed of properly and vehicles and equipment shall be free of soil and vegetation debris before entering natural habitats. Pruning tools shall be sanitized before use.
- Mitigation for permanent impacts to riparian habitat, will be accomplished through one or more of the following: (1) on-site mitigation; (2) the purchase of in-lieu fees; (3) off-site mitigation; and/or (4) purchase of mitigation bank credits. In any case, replacement mitigation will be at a minimum ratio of 3:1 for permanent impacts and 1:1 for temporary impacts and may include exotic plant removal and riparian species revegetation, depending on the selected scenario and location.
- Restoration monitoring will occur following establishment of revegetation following construction. Monitoring would be conducted for approximately 5 years, or as stipulated by

regulatory agencies during the permitting process. At a minimum, the monitoring surveys will consist of evaluation survival and health of plantings, evaluation for signs of drought and/or disease stress, weed or herbivory problems, and presence or trash or other debris. The monitoring plans would require a minimum of 80% survival.

BIO-5 Special-Status Plant Mitigation

Rare plant surveys were conducted within the entire BSA in 2021 and no special-status plants were observed. Rare plant surveys are generally accepted by the regulatory agencies for approximately three years. To insure that no special-status plants are impacted by the Project, the following mitigation measures shall be implemented:

- A qualified botanist will conduct rare plant surveys within the construction area, as needed. Surveys would be conducted during the appropriate blooming period in the year prior to construction for species with potential to be in the construction area, to the extent feasible. If any special-status plant species, is found during pre-construction surveys, high visibility ESA protective fencing would be installed around the special-status plants to prevent construction staff or equipment from entering this area, to the maximum extent feasible. The ESA protective fencing buffer would be species specific, with a minimum buffer radius based on the guidance from a qualified biologist. The biological monitor would be responsible for directing the implementation of additional avoidance measures, as needed.
- If it is determined that special-status plants will be directly impacted by the project, a species-specific mitigation plan will be prepared by a qualified biologist. The plan may include one or more of the following: plant relocation, seed collection and dispersal, on or off-site restoration, or payment into an agency-approved mitigation bank. The plan will be implemented prior to the completion of the project.

BIO-6 Prevention of Invasive Species Spread Mitigation

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

- All equipment used for off-road construction activities will be weed-free prior to entering the construction area.
- If project implementation calls for mulches or fill, they will be weed free.
- New revegetation materials, would be composed of non-invasive species and would be clear of weeds, and all erosion control and landscape planting would be conducted in a manner that would not result in the spread of invasive species.
- Any seed mixes or other vegetative material used for re-vegetation of disturbed sites will consist of locally adapted native plant materials.
- Any personal equipment (including boots/waders), construction materials (falsework members, sand bags, etc.) and construction equipment would be properly disinfected or cleaned according to the most current guidance provided by the State of California Aquatic

Invasive Species Management Plan prior to in-channel work to prevent the spread of aquatic invasive species.

BIO-7 Salmonids and Special-Status Fish Species Mitigation

- A NMFS /CDFW approved biologist would be onsite during construction activities that could impact the federally and/or state listed fish species. The biologist would provide on-site guidance to limit disturbance to the species and its habitat.
- Any structure/culvert placed within a waterway where fish do/may occur shall be designed, constructed, and maintained such that they do not constitute a barrier to upstream or downstream movement of aquatic life or cause an avoidance reaction by fish that impedes their upstream or downstream movement. This includes, but is not limited to, the supply of water at an appropriate depth, temperature, and velocity to facilitate upstream and downstream fish migration. For this project, this equates to designing the culverts to meet guidelines outlined in NMFS (2001).
- Impacts to herbaceous cover will be offset by reseeded any unvegetated and impacted areas with a suitable seed mixture post construction.
- To the maximum extent feasible, all of the interstitial spaces of the RSP will be buried below grade to allow for revegetation.
- A NMFS /CDFW approved biologist would walk in and/or adjacent to the Russian River, as feasible, alongside equipment to minimize/avoid fish entrapment during gravel work pad installation. The biologist would have the authority to pause work to allow fish to navigate away from the site, or to investigate the gravel work pad for potential entrapment. The biologist would implement safe monitoring practices by remaining visible to the operator at all times, maintaining a safe distance from equipment (to be established using standard safety protocols and in coordination with the operator), and remain in constant communication with the operator during work.
- A capture and relocation plan for special-status aquatic species would be developed by a qualified biologist prior to construction.
- By October 15, the temporary culverts, pipe, and in-stream work pads shall be removed from the channel. The gravel work pad shall be excavated down to the point at which there is a thin veneer remaining on the existing channel bed. Upon removal of the culverts and clean gravel, hand crews may redistribute the remaining gravel such that it does not become a barrier to the free passage of water or the movement of fish and aquatic animals. It shall not impede, or tend to impede, the passage of fish at any time, pursuant to Fish and Game Code Section 5901.
- Take or suspected take of special-status fish and wildlife species would be reported immediately to a qualified biologist. The NMFS /CDFW approved biologist would report the incident, or suspected incident, to the wildlife agencies within 24 hours.

BIO-8 Mitigation for Amphibians and Reptiles

- A pre-construction survey for California giant salamander, foothill yellow-legged frogs, red-bellied newts and western pond turtles will be implemented prior to the onset of project construction. A qualified biologist shall conduct a minimum of one survey of the BSA for these species. The survey shall be conducted a maximum of one week prior to construction. If individuals of any of these species are found within a construction impact zone, the individual(s) shall be allowed to move away on its own. If the individual does not move away on its own, the biologist shall move it to a safe location with suitable habitat up or downstream of the construction area. Relocation sites shall be based upon the qualified biologist's experience working with the species, and coordination with regulatory agencies, as necessary.
- If a pond turtle nest is found, the biologist shall flag the site and determine if construction activities can avoid affecting the nest. If the nest cannot be avoided, it will be excavated and re-buried at a suitable location outside of the construction impact zone by a qualified biologist. Any trapped, injured, or killed special-status amphibians or reptiles will be reported to CDFW.
- If a California giant salamander, foothill yellow-legged frog, red bellied newt or western pond turtle is encountered during construction, activities in the vicinity shall cease until appropriate corrective measures have been implemented or it has been determined that the individual will not be harmed. Any frogs encountered during construction shall be allowed to move away on their own. Any trapped, injured, or killed special-status frogs shall be reported immediately to CDFW.
- Materials stored below the top of bank could provide shelter for special-status amphibians or reptiles, such as on-site storage of pipes, conduits, and other materials, would be elevated above ground, where possible.
- Trenches or pits one foot or deeper that are left unfilled for more than 48 hours would be securely covered with boards or other similar material to prevent entrapment of special-status amphibians, reptiles, or other wildlife.
- No construction activities would be allowed during rain events, greater than 0.25 inch within 24 hours, or within 24-hours following a rain event . Prior to construction activities resuming, a qualified biologist would inspect the construction area and all equipment/materials for the presence of special-status amphibians and reptiles.
- Plastic monofilament netting, or similar material in any form, would not be used at the construction area.

BIO-9 Mitigation for sensitive Bat species

The following measures shall be implemented to prevent the impacts to bats:

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

- During the summer months (June 1 to August 15) prior to construction, visual surveys would be conducted at all identified roosting habitat to assess the presence of roosting bats. If presence of a roost is detected, an analysis would be completed to help assess the type of colony and usage.
- Prior to construction, and during the non-breeding and active season (typically October), bats would be safely evicted from roosts potentially directly impacted by the project under the direction of a qualified biologist. Once bats have been safely evicted, exclusionary devices would be installed to prevent bats from returning and roosting in these areas. Roosts that would not be directly impacted by the project would be left undisturbed.
- Trees designated for removal with potential day roosting habitat, would be removed using a two-step process. The tree removal would be conducted over two consecutive days under the supervision of a qualified biologist, as follows:
 - Step One - all non-habitat trees adjacent to and/or surrounding potential habitat trees, as identified by the qualified biologist, would be removed (or trimmed, if full removal can be avoided) on the first of the two days. In addition, limited trimming of the potential bat roosting habitat trees (branches and small limbs with no potential roosting features) would be completed on the first day. During Step one, construction crews would only use hand tools (i.e. chainsaws or similar).
 - Step two - on the calendar day immediately following step one, all of the potential habitat trees that were previously trimmed and/or avoided during step one would be removed.

BIO-10 Mitigation for Special-Status and Migratory Birds

Implementation of Mitigation Measure BIO-4 (Riparian Habitat) and replacement of landscape trees and vegetation will minimize and mitigate the loss of tree nesting sites. Tree removal during times of nesting could result in negative effects to the young of nesting birds. The following avoidance and minimization measure will reduce any potential impact to breeding birds:

- Trimming and removal of vegetation and trees would be minimized and performed outside of the nesting season, after August 31 and before February 15, to the extent feasible when bird nesting is most likely avoided unless a qualified biologist has inspected the site and determined that the tree removal or trimming will not affect nesting birds.
- In the event construction work, including trimming or removal of vegetation and trees, must be conducted during the nesting season (February 15 to August 31), nesting bird surveys would be completed within 500 feet of the construction area, as feasible, by a qualified biologist no more than 72 hours prior to trimming or clearing activities to determine if nesting birds are within the vegetation that would be trimmed or removed. Nesting bird surveys would be repeated if trimming or removal activities are suspended for five days or more.
- If nesting birds are found within 500 feet of the construction area, appropriate buffers consisting of orange flagging/fencing or similar (typically 300 feet for birds and 500 feet for

raptors) would be installed and maintained until nesting activity has ended, as determined in coordination with the project biologist and regulatory agencies, as appropriate.

- During construction, the qualified biologist shall conduct regular monitoring (at CDFW approved intervals) to evaluate the nest(s) for potential disturbances associated with construction activities. Construction within the buffer shall be prohibited until the qualified biologist determines the nest is no longer active. If an active nest is found after the completion of the pre-construction surveys and after construction begins, all construction activities shall stop until a qualified biologist has evaluated the nest and erected the appropriate buffer around the nest. If establishment of the buffer is not feasible, CDFW and/or USFWS shall be contacted for further avoidance and minimization guidelines.

Beginning February 1 of the season that the existing bridge will be demolished and removed, a bird barrier would be installed on the underside of the entire existing bridge structure sufficient to prevent birds from nesting. Wherever feasible, the barrier will consist of hard surface exclusionary materials (such as plywood or plexiglass) to prevent cliff swallows from nesting on areas of the bridges under construction. Where hard surface exclusionary materials cannot be effectively applied, netting can be used as an exclusionary material as a last resort. The bird barrier would be inspected, and repairs made as needed from installation until September 1 or until no longer needed. The barrier would be removed as needed to construct the project. If the project is not completed during the construction season following installation of the barrier, the barrier would be installed again beginning February 15 of the next year. The contractor will removing all unoccupied nests from previous years and any new starts from construction areas before swallows have completed nests. The biological monitor ensuring that there are no birds or eggs in nests that are removed. If netting is used, it will be installed and maintained in such a way as to avoid adverse impacts on bats.

Significance after Mitigation

Implementation of Mitigation Measures described in the section above (BIO-1 through BIO-12) would reduce potential impacts to special-status species to less than significant levels by requiring general mitigation measures, including worker training; erosion and sediment control; accidental spill and pollution prevention; riparian habitat replacement; pre-construction surveys for special-status species and nesting birds, and additional special-status species avoidance and minimization measures.

| |
|---|
| Threshold: Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and U.S. Fish and Wildlife Service? |
|---|

Impact BIO-2 CONSTRUCTION, OPERATION, AND MAINTENANCE OF THE PROJECT COULD IMPACT RIPARIAN HABITAT OR SENSITIVE NATURAL COMMUNITIES. PROPOSED MITIGATIONS MEASURES WILL REDUCE IMPACTS TO LESS THAN SIGNIFICANT

The natural communities of concern within the BSA include riparian habitat on the banks of the Russian River and Dutch Bill Creek, waters of the U.S./State, and wildlife movement corridors. In addition, the Russian River is designated critical habitat for the CCC coho salmon, CCC steelhead,

and CC Chinook salmon. Dutch Bill Creek is designated critical habitat for CCC coho salmon and CCC steelhead.

Riparian Habitat

The riparian habitat on site is dominated by willows, bay, big leaf maple, Oregon Ash and alders, and varies from 0 to approximately 300 feet wide along the southern banks of the Russian River and along the banks of Dutch Bill Creek within the BSA. Riparian habitat at the site includes the sensitive natural community of Oregon Ash Groves.

The proposed project may result in direct temporary impacts on approximately 0.26 acre of riparian woodland, including the removal of approximately 8 trees with greater than 6 inches diameter at breast height (dbh). These impacts are located on the west bank of Dutch Bill Creek, and under the existing bridge. There are no permanent impacts to riparian habitat.

The replacement bridge is designed and will be constructed to avoid and minimize removal of riparian vegetation to the maximum extent practicable. Staging areas and construction access routes will avoid encroachment into riparian vegetation where practicable and minimize encroachment where complete avoidance is not practicable. Riparian habitat that is outside of proposed work areas will be clearly identified in the construction drawings and contractor work plans. Exclusionary fencing will be installed to mark the boundaries of riparian areas that are located outside work areas. The exclusionary fencing shall be inspected and maintained on a regular basis throughout project construction. Additionally, temporary and permanent impacts to riparian habitat, including Oregon Ash Groves, will be compensated for as described above in **BIO-4** (Replacement of Lost Riparian Habitat) as well as **BIO-11** (Waters of the U.S./Waters of the State and CDFW Jurisdictional Areas Mitigation Measures) and **BIO-12** (Sensitive Natural Communities) below.

Waters of the United States/State under Jurisdiction of USACE, RWQCB, and CDFW

GPA consultants conducted a waters and wetland delineation identifying potential waters of the U.S./State and CDFW jurisdiction within the BSA on June 25, 2019. Potentially jurisdictional waters of the U.S./State include the Russian River and Dutch Bill Creek. A total of approximately 2.23 acres of potential jurisdictional waters of the U.S./State and approximately 6.78 acres of potential CDFW jurisdictional areas were mapped during the delineation (Table 4.4-3, Figures 4.4-3 and 4.4-5). No wetlands meeting the USACE three-parameter wetland definition for vegetation, soils and hydrology were observed in the BSA.

Construction activities potentially affecting waterways within USACE, RWQCB, and CDFW jurisdiction include: use of the work pads within the Russian River; water diversions of the Russian River (and potentially Dutch Bill Creek if flowing at the time of construction); demolition of the existing bridge; grading; and installation of the replacement bridge and roadway approaches. These activities could result in temporary and permanent impacts to jurisdictional areas.

The Russian River is a perennial waterway; therefore, a water diversion would be required for the removal of the existing bridge, construction of the new bridge, and bank/channel re-establishment. Dutch Bill Creek is generally dry during the late summer and early fall; and work within the creek bed, upstream of the creek mouth, is not expected; however, if water is flowing, a diversion would

be required at the mouth of Dutch Bill Creek. Equipment access to construct the bridge abutments and bank and channel re-establishment would also result in temporary impacts on these waterways and construction materials, dust, and/or debris entering flowing water could temporarily impact water quality. Construction would include installing rock slope protection (RSP) covering a portion of the soils. While restoration plans include planting the interstitial areas of the RSP, where possible, the placement of the RSP would prohibit natural revegetation in areas requiring RSP.

Temporary impacts to the Russian River and Dutch Bill Creek include approximately 1.73 acres of non-wetland waters of the U.S./state under jurisdiction of the USACE and RWQCB and approximately 3.76 acres under CDFW jurisdiction as a result of construction activities including work pad construction, temporary water diversion, riparian vegetation removal, new bridge construction, removal of existing bridge, and slope stabilization efforts. Permanent impacts to the Russian River and Dutch Bill Creek include 0.02 acres of non-wetland waters of the U.S./state for replacement bridge piers and 0.04 acres under CDFW jurisdiction due to construction of replacement bridge piers, and RSP slope stabilization efforts (Figure 4.4-5, Figure 4.4-6, and Table 4.4-4).

Since the proposed new bridge is a clear span structure, the removal of the existing bridge piers and the pre-1934 remnant bridge pier footing from with the channel of the Russian River would offset permanent impacts to waters of the U.S./state creating a net benefit. The construction of the new bridge would clear span the low flow channel of the Russian River and construction activities within the Russian River and Dutch Bill Creek would be temporary.

Figure 4.4-5 Potential Impacts to Potential U.S. Army Corps of Engineers and Regional Water Quality Control Board OWHM Jurisdiction



Figure 4.4-6 Potential Impacts to CDFW Jurisdictional Areas.

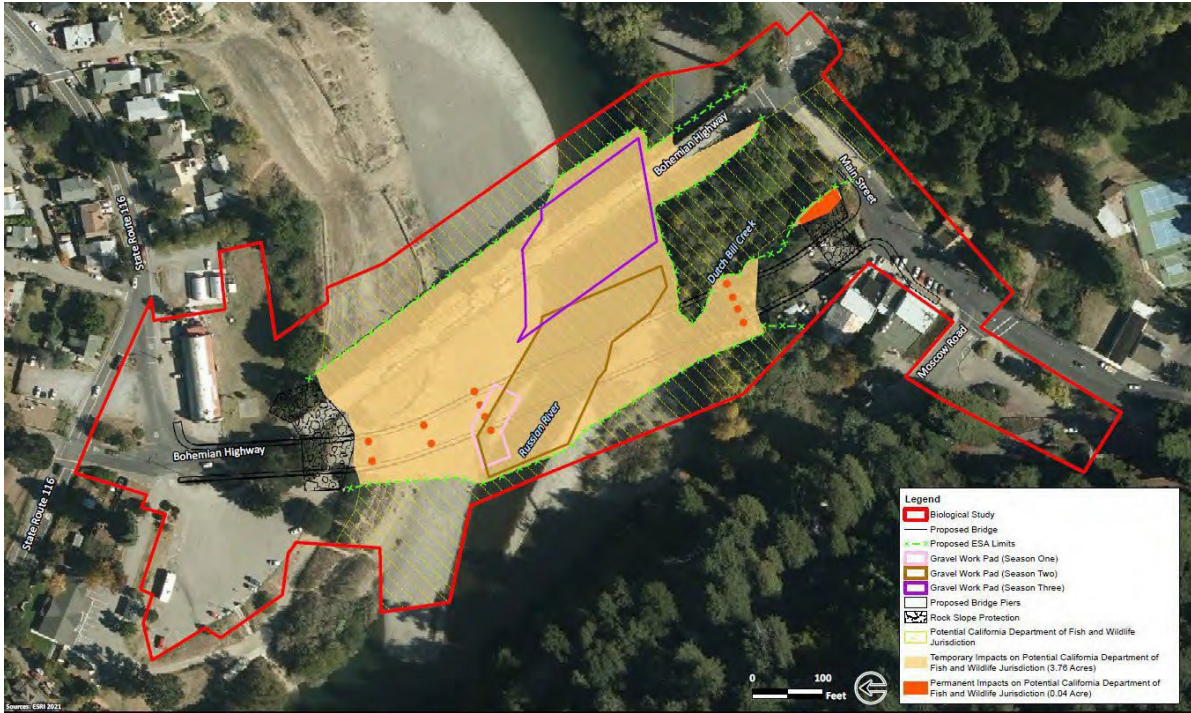


Table 4.4-4 Potential Impacts to Waters of the U.S./State within USACE, RWQCB, and CDFW Jurisdictional Areas.

| Feature and Jurisdiction | Temporary Impacts (acres) | Permanent Impacts (acres) | Beneficial Permanent Impact (acres) | Net Beneficial Permanent Impact (acres) |
|---|---------------------------|---------------------------|-------------------------------------|---|
| Russian River/Dutch Bill Creek | | | | |
| USACE and RWQCB Jurisdiction (Waters of the U.S./State, below OHWM) | 1.41 | 0.002 | 0.03 ¹ | 0.028 ² |
| CDFW Jurisdiction (areas above and below OHWM) | 3.49 | 0.04 | 0.045 ³ | 0.005 ⁴ |

1. Total beneficial impact Includes removal of pre-1934 bridge remnant pier footing (0.005 acre) and removal of three (3) existing bridge piers (0.025 acres) within waters of the U.S./state (below OHWM) = 0.03 acres.
2. Total net permanent benefit is 0.028 acres waters of the U.S./state (below OHWM). Net beneficial permanent impact = (Sum of Benefits) - (Sum of Impacts) or (0.03 acres) – (0.002 acres) = 0.028 acres.
3. Total beneficial impact Includes removal of pre-1934 bridge remnant pier footing (0.005 acre) and removal of nine (9) existing bridge piers (0.025 acres) within CDFW Jurisdiction (areas above and below OHWM).
4. Total Impact is 0.005 acres within CDFW Jurisdiction (areas above and below OHWM). Total Impact = (Sum of Benefits) – (Sum of Impacts) or (0.005 + 0.04 acres) - (0.04 acres) = 0.005 acres

Mitigation Measures

To the extent practicable, the discharge of dredged or fill material into waters of the U.S or waters of the state under jurisdiction of the USFWS, CDFW, or RWQCB, including riparian vegetation and sensitive natural communities, shall be avoided. Although the replacement bridge is designed to clear span the low flow channel of the Russian River, and existing piers will be removed resulting in an overall net permanent benefit to jurisdictional areas (see Table 4.4-4), complete avoidance is not feasible. Temporary and permanent impacts include the permanent placement of replacement bridge piers and RSP around the southern replacement bridge abutment, and temporary impacts for the construction of the replacement bridge and demolition of the existing bridge. Therefore, the following measures shall be implemented to further avoid, minimize and mitigate the potential for project-related impacts.

Mitigation for Riparian Vegetation under CDFW Jurisdictional Areas

Mitigation for riparian vegetation includes Oregon Ash Groves, a CDFW California Sensitive Natural Community. **BIO-4** (Riparian Habitat) above will be mitigation for riparian vegetation and Oregon Ash Groves.

BIO-11 Waters of the U.S./Waters of the State and CDFW Jurisdictional Areas Mitigation Measures

Mitigation for “waters of the U.S./state and CDFW jurisdictional areas include:

- To the maximum extent practicable, activities that increase the erosion potential in the project area shall be restricted to the relatively dry summer and early fall period to minimize the potential for rainfall events to transport sediment to surface water features. Construction within the low flow channel of the Russian River and Dutch Bill Creek would be limited to between June 15 and October 15. Work within the top of bank and outside of the low flow channel could begin on April 15, with implementation of BMPS and as approved by regulatory agencies during permitting. Upland construction will likely occur throughout the year as long as work activities comply with the conservation and avoidance and minimization measures identified herein and by regulatory permitting agencies for the protection of sensitive or special-status plant or animal species. For upland construction activities that must take place during the late fall, winter, or spring, then temporary erosion and sediment control structures shall be in place and operational at the end of each construction day and maintained until permanent erosion control structures are in place.

- Areas where any potential wetland or upland vegetation need to be removed shall be identified in advance of ground disturbance and limited to only those areas that have been approved by the County and regulatory agencies.
- Within 10 days of completion of construction in those areas where subsequent ground disturbance will not occur for 10 calendar days or more, weed-free mulch shall be applied to disturbed areas to reduce the potential for short-term erosion. Prior to a rain event or when there is a greater than 50 percent possibility of rain within the next 24 hours, as forecasted by the National Weather Service, weed-free mulch shall be applied to all exposed areas upon completion of the day's activities. Soils shall not be left exposed during the rainy season.
- Suitable BMPs, such as silt fences, straw wattles, or catch basins, shall be placed below all construction activities at the edge of surface water features to intercept sediment before it reaches the waterway. These structures shall be installed prior to any clearing or grading activities. These structures shall be installed prior to any clearing or grading activities. Further, sediment built up at the base of BMPs will be removed before BMP removal to avoid any accumulated sediments from being mobilized post-construction
- If temporary stockpile sites are used, they shall be located such that they do not drain directly into a surface water feature, if possible. If a stockpiles drains into a surface water feature, catch basins shall be constructed to intercept sediment before it reaches the feature. Stockpile sites shall be graded and vegetated to reduce the potential for erosion.
- Sediment control measures shall be in place prior to the onset of the rainy season and will be monitored and maintained in good working condition until disturbed areas have been revegetated.
- Any gravel material placed in the Russian River or Dutch Bill Creek would be washed at least once and have a cleanliness value of 85 or higher based on Caltrans Test No. 227.

BIO-12 –Sensitive Natural Communities

Sensitive Natural Communities Sensitive natural communities potentially impacted within the BSA include Oregon Ash Groves. Temporary impacts to Oregon Ash Groves will be mitigated with implementation of **BIO-4** (Riparian Habitat). No jurisdictional wetlands meeting the USACE's three-parameter definition were observed during biological surveys, however should any wetlands or any other sensitive natural communities develop or be delineated on site prior to construction, they would be replaced in-kind, on-site a minimum ratio of 1:1 or if off-site to ensure no net loss, as coordinated with regulatory agencies during permitting, per Executive Order 11990, Protection of Wetlands (1977). Other options may include off-site mitigation, in-lieu fees, mitigation bank, or purchase of lands or conservation easement as coordinated with the regulatory agencies during permitting. Areas restored on- or off-site will be monitored to ensure restoration success criteria put forth by regulatory agencies are met. All temporary impacts to sensitive natural communities shall be fully restored to natural conditions.

BIO-13 –Mitigation for Designated Critical Habitat and Essential Fish Habitat

The Project site is within designated critical habitat for steelhead, Coho and Chinook salmon and within Essential Fish Habitat (EFH) for chinook and Coho salmon. Impacts to designated critical habitat and EFH salmonids will be mitigated with implementation of BIO-1 (General Mitigation Measures); BIO-2 Erosion and Sediment Control; BIO-3 Accidental Spill and Pollution Prevention; BIO-4 Riparian Habitat; BIO-7 (Salmonids and Special Status Fish Mitigation); and BIO-11 Waters of the U.S./Waters of the State and CDFW Jurisdictional Areas; and BIO-12 Sensitive Natural Communities.

Significance After Mitigation

Implementation of Mitigation Measures BIO-1 through BIO-4, BIO-7, together with BIO-11, 12 and 13 would reduce potential impacts to riparian habitats, sensitive natural communities, and jurisdictional waters to less than significant levels by requiring avoidance where possible and by requiring restoration and monitoring of jurisdictional areas, sensitive natural communities, designated critical habitat and EFH.

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

Impact BIO-3 CONSTRUCTION, OPERATION, AND MAINTENANCE OF THE PROJECT WOULD NOT IMPACT JURISDICTIONAL STATE OR FEDERALLY PROTECTED WETLANDS DURING CONSTRUCTION, OPERATION, AND/OR MAINTENANCE. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION.

GPA consultants conducted a waters and wetland delineation in 2019, including determining the OWHM for the Russian River and Dutch Bill Creek and evaluation potential federal and state wetland areas. No areas met all three wetland parameters (vegetation, soils and hydrology) to meet wetland definition criteria (NES, 2021). Therefore, no temporary or permanent impacts to wetlands are anticipated. The County will coordinate with the USACE and RWQCB to verify results of the waters and wetland delineation during the regulatory permitting process. Should any wetlands form during the interim, measures to avoid and minimize wetland impacts and mitigate to ensure no net loss would be implemented according to ratios required by regulatory agencies during the permitting process.

Mitigation Measures

BIO-14 Jurisdictional Delineation Verification

The County will submit the GPA preliminary delineation of the waters of the U.S. and waters of the state, including USACE, RWQCB, and CDFW jurisdictional areas to each regulatory agency for review and approval and verification of the extent of the jurisdiction for USACE, RWQCB, and CDFW. While the preliminary delineation did not identify any areas meeting all three wetland criteria parameters, should any be wetland areas be identified and/or expected to be impacted, the following mitigation measures would be implemented:

- Avoidance and protection of any wetlands, to the maximum extent feasible and use of construction fencing to identify potential wetland areas as “environmental sensitive areas” to be excluded from construction activities
- If any wetlands jurisdictional areas are expected to be impacted, then the appropriate regulatory agencies permits would be obtained prior to construction, including a USACE CWA Section 404 permit; a RWQCB Section 401 Water Quality Certification; and/or a CDFW Lake or Streambed Alteration Agreement pursuant to Section 1600 et seq. of the CFGC.
- Mitigation for permanent impacts on wetland habitat, would be accomplished through one or more of the following: (1) on-site mitigation; (2) the purchase of in-lieu fees; (3) off-site mitigation; and/or (4) purchase of mitigation bank credits. Mitigation will be at a minimum ratio of 2:1 for permanent impacts and 1:1 for temporary impacts; however, the final ratio will be established through consultation and coordination with regulatory agencies during the permitting process.
- General Avoidance and minimization measures, including those in BIO-1 through BIO 3, as well as:
 - Any material/spoils generated from project activities shall be located away from jurisdictional areas or special status habitat and protected from storm water run-off using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls (non- monofilament), covers, sand/gravel bags, and straw bale barriers, as appropriate.
 - Materials shall be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage from contaminating the ground and generally at least 50 feet from the top of bank.

BIO-15 Surplus Soil Disposal

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

Significance After Mitigation

Implementation of Mitigation Measures **BIO-1** (General Mitigation Measures); **BIO-2** (Erosion and Sediment Control); **BIO-3** (Accidental Spill and Pollution Prevention); **BIO-14** (Jurisdictional Delineation Verification) and **BIO-15** (Surplus Soil Disposal) would reduce potential impacts to federally or state-protected wetlands to less than significant levels, if any wetlands developed at within the BSA prior to construction.

Threshold: Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Impact BIO-4 THE PROJECT WOULD NOT INTERFERE SUBSTANTIALLY WITH WILDLIFE MOVEMENTS IN THE PROJECT AREA. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION.

The Russian River is a regionally important east-west movement corridor for wildlife and migration habitat for steelhead, Coho, and Chinook. Dutch Bill Creek is a similarly important north-west movement wildlife movement corridor and migration habitat for Coho and steelhead. Replacement of the bridge could result in a temporary water bypass in the Russian River and potentially Dutch Bill Creek also, if water is present at the time of construction. To ensure that hydraulic conditions are suitable and that the in-channel temporary work pad would not impede the movement of aquatic organisms, the bypass with culverts has been designed within the proposed construction work pad and would be installed according to NMFS' *Guidelines for Salmonid Passage at Stream Crossings* (National Marine Fisheries Service 2001).

The BSA is mapped at the edge of an Essential Connectivity Area connecting two natural land blocks, that in addition to the river and creek corridors, allows terrestrial wildlife to move within and through the area in and around the BSA. The creek likely attracts terrestrial wildlife in the area due to the presence of water. Amphibians and turtles may move through the creek corridor.

Limiting construction to daytime hours, will allow wildlife to move through the area early morning and evening hours that construction is not actively occurring. Biologists will be onsite each morning to survey and potentially move any remaining wildlife outside the construction zone to similar suitable habitat nearby, outside of the immediate work area, in coordination with regulatory coordination, as needed. Any potential impacts to wildlife are expected to be temporary and will only occur during the limited time period of Project construction.

The bridge is designed to clear span the low flow channel of the Russian River, therefore improving fish and aquatic species migration habitat by removal of the existing in-water bridge piers and pre-1934 remnant bridge pier. Following construction, wildlife corridor movement is expected to remain consistent with existing conditions, with the improvement to water fish and aquatic species migration,

Mitigation Measures

Implementation of Mitigation Measure **BIO-1** (General Mitigation) **Bio-2** (Erosion And Sediment Control Mitigation); **BIO-3** (Accidental Spill and Pollution Prevention); **BIO-4** (Riparian Habitat) and **BIO-7** (Salmonids and Special-status Fish) would reduce potentially significant impacts to wildlife and migratory fish to less than significant level.

Significance After Mitigation

Impacts would be less than significant with mitigation.

Threshold: Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Impact BIO-5 THE REPLACEMENT OF THE EXISTING BRIDGE WOULD BE SUBJECT TO THE COUNTY'S LOCAL POLICIES AND REQUIREMENTS PROTECTING BIOLOGICAL RESOURCES. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION.

The Project BSA falls under the jurisdiction of Sonoma County, which provides protection for biological resources through the implementation of its General Plan and Zoning Code.

Sonoma County General Plan

The *Sonoma County General Plan 2020* (Sonoma County 2008) Land Use Element and Open Space & Resource Conservation Element both contain policies to protect natural resource lands including, but not limited to watershed, fish and wildlife habitat, biotic areas, and habitat connectivity corridors.

Tree Protection Ordinance

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

Riparian Corridor (RC) Ordinance

The RC combining zone is established to protect biotic resource communities, including critical habitat areas within and along riparian corridors, for their habitat and environmental value, and to implement the provisions of the General Plan Open Space and Resource Conservation and Water Resources Elements. These provisions are intended to protect and enhance riparian corridors and functions along designated streams, balancing the need for agricultural production, urban development, timber and mining operations, and other land uses with the preservation of riparian vegetation, protection of water resources, floodplain management, wildlife habitat and movement, stream shade, fisheries, water quality, channel stability, groundwater recharge, opportunities for recreation, education and aesthetic appreciation and other riparian functions and values. While this ordinance is not applicable to County public works projects, it is used as a guide for determining impacts and appropriate mitigation measures.

The project as proposed will not conflict with the above policies and ordinances. The bridge has been designed so that vegetation removal will be avoided and minimized to the maximum extent feasible. Trees removed having greater than 6 inches diameter breast height and riparian vegetation areas will be replaced at a minimum 3:1 ratio, for permanent impacts and 1:1 for temporary impacts, or as authorized by regulatory agencies during permitting.

Mitigation Measures

With implementation of **BIO-1** (General Mitigation Measures); **BIO-2** (Erosion and Sediment Control); **BIO-3** (Accidental Spill and Pollution Prevention); **BIO-4** (Riparian Habitat Replacement); **BIO-5** (Special-status Plant Mitigation) and **BIO-6** (Prevention of Invasive Species Spread); **BIO-7** (Salmonids and Special Status Fish Mitigation); **BIO-8** Amphibians and Reptiles Mitigation; **BIO-9** (Bats); **BIO-10** (Birds); **BIO-11** (Waters of the U.S./Waters of the State and CDFW Jurisdictional Areas Mitigation Measures) and **BIO-12** (Sensitive Natural Communities) **BIO-14** (Jurisdictional Delineation Verification); and **BIO-15** (Surplus Soil Disposal).

Significance After Mitigation

Impacts would be less than significant with mitigation.

Threshold: Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Impact BIO-6 THE PROJECT WOULD NOT CONFLICT WITH ANY APPROVED LOCAL, REGIONAL OR STATE HABITAT CONSERVATION PLAN. THE PROJECT WOULD HAVE NO IMPACT.

Comment:

Currently, the Project site is not located within any area subject to an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved, local, regional or state habitat conservation plan.

Mitigation Measures

No mitigation measures are required.

Significance after Mitigation

No impact would occur and mitigation is not required.

4.4.4 Cumulative Impacts

A project's environmental impacts are "cumulatively considerable" if the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (*CEQA Guidelines* Section 15065[a][3]). For the purposes of this analysis, the cumulative setting for jurisdictional features and special-status aquatic plant and wildlife species is considered suitable habitat within the Russian River and Dutch Bill Creek Watersheds. The cumulative setting for special-status terrestrial plant and wildlife species is considered suitable habitat within Sonoma County.

Existing and continuing development could contribute to cumulative impacts on jurisdictional features. Habitat removal from current and future development in the area is the biggest threat to plant and wildlife species. Wildlife is also impacted by collisions with human structures and equipment, poisoning by pesticides and contaminants, damming and diverting of rivers and streams, predation by domestic animals, and disease. Bat roosts and hibernation areas can be damaged or destroyed by vandalism and demolition.

The project includes removal of an existing structurally deficient bridge and replacement with a new bridge. Although the project would minimally increase the footprint of human disturbance locally, (due to conformance to modern roadway and bridge design standards) the project would not contribute to new commercial or residential development in the project vicinity.

Construction of the project would have temporary and permanent impacts on special-status natural communities identified by the CNDDDB including Oregon Ash Groves, a CDFW California Sensitive Natural Communities list community, and jurisdictional water features (riverine and riparian) that are otherwise considered special-status communities. Riparian habitat is also considered a locally

significant community. However, given the relatively small size and scale of the project within the region, and with implementation of mitigation measures described above, the project would have a minimal contribution to cumulative impacts on Oregon Ash Groves, jurisdictional features, or locally significant habitats.

The project could result in direct and indirect impacts on plant and wildlife species. However, with implementation of avoidance, minimization, and mitigation measures to prevent and/or minimize adverse impacts, the project would have a minimal contribution to cumulative impacts on plant and wildlife species. In addition to the avoidance, minimization, and mitigation measures described here, any additional measures required by regulatory agencies and permits would be implemented during construction.

There are no other known planned projects in the vicinity of the BSA. Therefore, the project would not result in cumulatively considerable impacts on biological resources.

This page intentionally left blank.

Cultural Resources Table of Contents

| | | |
|-------|--------------------------|--------|
| 4.5 | Cultural Resources | 4.5-1 |
| 4.5.1 | Setting..... | 4.5-1 |
| 4.5.2 | Regulatory Setting | 4.5-11 |
| 4.5.3 | Impact Analysis | 4.5-15 |
| 4.5.4 | Cumulative Impacts | 4.5-21 |

Tables

| | | |
|-------------|---------------------------------------|--------|
| Table 4.5-1 | Structures Over 45 Years of Age | 4.5-11 |
|-------------|---------------------------------------|--------|

Figures

| | | |
|--------------|---|--------|
| Figure 4.5-1 | Archaeological and Build Environment Area of Potential Effects Map..... | 4.5-10 |
|--------------|---|--------|

4.5 Cultural Resources

The analysis in this section has been prepared in accordance with *CEQA Guidelines* Section 15064.5 and considers potential impacts to Cultural Resources. Cultural resources consist of historic-period and prehistoric archaeological sites, and built environment historical resources.

Archaeological resources consist of the physical remains of past human activity that have been preserved in the ground but no longer take the form of a standing structure (e.g., a house or building) and can date to the prehistoric or historic period. Archaeological remains may occur in the same place as standing structures but are considered a distinct element (called a component) of the larger resource.

Built environment resources consist of buildings, structures, objects, sites, or districts. Typically, built environment resources must be 50 years of age or older to qualify as cultural resources. Where these resources form a landscape unified by a coherent historical or design theme, they may qualify as a rural historic landscape (U.S. Department of the Interior 1999:1).

This section includes a summary of cultural resources background information and a review of known archaeological and built environment resources; it also discusses the proposed project's potential impacts on these resources. Potential impacts to tribal resources are further addressed in Section 4.17, *Tribal Cultural Resources*.

4.5.1 Setting

Natural Environment

The Archaeological Area of Potential Effects (APE) is located on the confluence of the Russian River and Dutch Bill Creek within a steep canyon that transects the North Coast Ranges before emptying into the Pacific Ocean at the town of Jenner, approximately 10 miles to the west. The Archaeological APE is currently within the community of Monte Rio, which has developed this stretch of the river with commercial and residential buildings lining the banks of the river and the surrounding slopes. While the development of Monte Rio has significantly impacted the riparian habitat and redwood forest within the Archaeological APE, densely vegetated zones exist between buildings and the sides of roads. Riparian habitats within the coast ranges include various willows, bay laurel and dogwood. Redwood forest within the "fog belt" of the North Coast Ranges in California, which runs north from the Big Sur region to the Oregon border, is dominated by redwood (*Sequoia sempervirens*) and Douglas fir (*Pseudotsuga menziesii*) and intermixed with madrone (*Larbutus menziesii*), mountain dogwood (*Cornus nuttallii*) and tan oak. Historically, the Russian River has supported major runs of Coho and Chinook salmon and steelhead.

Ethnographic Context

The Archaeological APE lies within territory with cultural significance to both the Kashia Band of Pomo Indians of the Stewarts Point Rancheria (also known as "Kashia Pomo") and the Coast (Bodega) Miwok. The boundary between the two has been variously placed at Duncans Point (Kroeber 1925; Steward 1943), approximately 6.5 miles southwest of the project, and Salmon Creek (Barrett 1908), south of the Archaeological APE. Ethnographic accounts note that the two groups had beneficial trade relations (Barrett 1908).

Barrett (1908) shows relatively few villages along this stretch of the Russian River, likely due to its placement within the historical coast redwood forest belt. Nearest the Project Area is Halcíwinai, at the present site of Duncans Mill. Farther upstream is Cycóle, at the present site of Guerneville (Barrett 1908:Map 1).

Pomo tribelets were small, autonomous groups that each controlled a territory related to drainages, with a main settlement. Village population varied but the group might consist of 200 to 400 people in the central sedentary village, with a formal leadership, and fixed territories of 389 square kilometers (150 square miles) or less (Milliken 1995:20–24). Seasonal camps were placed near food sources like salmon streams or sea mammal rookeries.

The Coast Miwok had year-round settlements focused on the shores of Bodega Bay, and they would hunt in the nearby hills in the summer.

Milliken (2010:21) identifies the Archaeological APE as being within the Duncan's Point region, adjacent to the border with the Guerneville region. The associated main tribelet/rancheria of the Duncan's Point region is identified as Kabemali, and Bitakomtata is that of the Guerneville region. The population density at contact along this coastal strip and inland hills is estimated at 3.53 persons per square mile, a reduction from the Guerneville Region and Bodega Bay region to the south (4.1–6.0 persons per square mile) but higher than regions along the coast to the north.

Currently, the Federated Indians of Graton Rancheria consist of both Coast Miwok and Southern Pomo people. The Kashia Band of Pomo Indians of the Stewarts Point Rancheria are also known as the Kashaya Pomo. Both tribes are federally recognized and play an active role in society today, including the preservation of traditional practices, protection of cultural resources, and environmental stewardship.

Historic Context

The history of the Archaeological APE and vicinity can be divided into three periods: The Russian Colonial Period, The Mexican Rancho Period, and The American Period. The American Period is organized into two economic themes: Timber Harvesting and the Development of Recreation in Rio the Lower Russian River. The material on the Russian and Mexican Periods borrows heavily from JRP (2011) and the discussion on recreation is taken largely from research provided by GPA Consulting for the Historic Resources Evaluation Report (HRER) for this project (Lyons 2021).

The Russian Colonial Period

Exploration of the California coast north of the San Francisco Bay by Europeans began in the late 1500s. Spanish, English and Russian explorations had the greatest impact on the development of the northwest coast (Bowen & Co. 1880:39; Sturtevant and Suttles 1990). In the 1700s, Spanish influence spread northwards into what became California from Mexico but stalled for a period at San Francisco Bay. Spaniards explored northward with Juan Francisco de la Bodega y Quadra providing the name for the shallow gulf five miles south of the Ballard Ranch in 1775. While the Spaniards believed their claim to continue north, the lack of settlement left the territory vulnerable to other nations (Bowen & Co. 1880:39).

Meanwhile Russian explorer Vitus Bering and Alexeii Chirikov sailed eastwards from Siberia in 1742–1743 to Alaska. The lucrative sea otter fur trade lured Russian traders and hunters into Siberian and Alaskan waters. Overhunting in the late eighteenth century forced traders to search farther afield. They also sought sources of supply for their Alaskan outposts because the posts could not grow

their own supplies, and resupply from Russia was expensive. Spanish officials were not interested, however, in establishing permanent Russian trade in their territory (Lightfoot 1994:115, 119).

While Spanish opposition would keep the Russians out of San Francisco Bay, the unsettled north coast provided opportunity. The result was Fort Ross, the main Russian Settlement in California, established in 1812. The fort was built on a bluff overlooking the Pacific Ocean about 25 miles north of Bodega Bay. The Russians hired or conscripted Aleut hunters from Alaska, who created their own village outside the fort, and native Californians were hired to build the fort and established their own village to the east. For a deepwater port, the Russians used Bodega Bay to the south where goods were offloaded and brought across land to Fort Ross (Essig 1933:192; Gibson 1976:112–113, 116; Lightfoot 1994:122–123).

Sea otter hunting was the fort's main export during the 1810s, but the otter population soon diminished (Du Four 1933:240; Essig 1933; Gibson 1976). Following the collapse of the sea otter population the colony placed a greater focus on industry, including shipbuilding, furniture production, leather goods and bricks. The Russians used these trade goods to secure supplies for their continuing Alaskan operations. In addition to the fort and surrounding complex, three farms were established outside the fort. While the location of these farms is obscured through discrepancies in the historical record, the Kostromintinof farm appears to be located closest to the Archaeological APE, approximately six miles west at the mouth of the Russian River (Hansen and Miller 1962:22).

In 1839, the Russian American Company made the decision to abandon the economically unsuccessful colony. Successive years of failed crop production, lack of sea otters, pressures from Mexican officials, and encroaching American settlers prevented the colony from thriving as a business venture. The Russians returned the land on which their settlement sat to its native owners. The structures and material goods were sold to John Sutter. The Russians left Fort Ross in December 1841 and left California in January of the following year (Du Four 1933:257–260; Gibson 1976:193, 199).

The Mexican Rancho Period

In the years immediately after the Russians departed, the Mexican government divided the former Russian occupied territory into two ranchos, Bodega and Muñiz, separated by the Russian River. The Mexican government granted the southern of the two ranchos, Bodega, to Captain Stephen Smith in 1844. The rancho was eight leagues or 35,487 acres and included the land where the Ballard Ranch is now located. Smith arrived in Bodega in 1846 and is noted for having brought with him a steam engine that he used to build the first steam-powered mill in the state. The residence and main compound of Smith's Rancho was inland at the former Khlebnikof farm, near the present town of Bodega (formerly Bodega Corners; Munro-Fraser 1880:191–192, 195–197; Thompson & West 1877).

As noted in the historical map review, the Archaeological APE was located just outside the boundaries of Rancho Bodega. While cattle did roam over the vast pastures encompassed by the Rancho, it is unlikely that such ranching took place within the steep, rugged canyons and gulches in the Russian River Canyon.

With the Treaty of Guadalupe in 1848, the Mexican state of Alta California was annexed by the United States as the Territory of California. As the Treaty made assurances that Mexican land rights would be respected, a legal process for confirming Rancho properties was established. Though the American legal process was alien to the former Californios, and often dragged on so long that often multiplying squatters left legal confirmation moot, Rancho Bodega was successfully patented by the

United States Court in 1859. Only a few years into the 1860s, the most of the former rancho lands would be parceled and sold to dairymen along the coast, and timber companies in the interior.

The American Period

In a territory where cattle once far outnumbered the settler population, the years following the Gold Rush of 1849 brought into California tens of thousands fortune seekers from across the world. While most of the argonauts would return home no richer than they arrived, immense fortunes were panned and scratched out of the gulches and veins of the Sierra Nevada. San Francisco, as the major port of entry on the California coast, became a central accumulation point for the capital generated from the mines. The rapid growth and, considering the number of fires that ravaged the city, regrowth of the city created a huge demand for lumber for construction.

Timber Harvesting

While the geology of Sonoma County did not create the El Dorado to the east, those parts of it located at the south end of the North Coast Range provided a perfect climate and geography for an ancient belt of dense redwood groves. While timber harvesting represented an early economic focus for Sonoma County, it would not reach the Archaeological APE vicinity in the Russian River Canyon until construction of the North Pacific Coast Railroad (NPC) reached Duncans Mills in the winter of 1876–1877 (Bowen & Co. 1880:86).

The NPC was first opened in 1875, its steam engines servicing Marin County from the southernmost terminus in Sausalito to the northern point in Tomales. In 1876, the NPC expanded in Sonoma County, connecting Valley Ford, Bodega Corners, Freestone, and Occidental before descending into Dutch Bill Creek to Monte Rio (originally referred to as Russian River Station No. 7). From Monte Rio the road followed the Russian River east about two miles to its temporary terminus in Duncan Mills (Bowen & Co. 1880:86–87).

Along the three-mile stretch between Monte Rio and Duncan Mills, upwards of five stations were established – Monte Rio, Cascade, Fern Cove, Mesa Grande (aka Big Flat), Sheridan, and Moscow (Hoefer 2015). Each of these were set up at sawmills which were established and moved as areas were cut over. While several companies owned the timberland and ran the direct milling operations (e.g., Latham & Streetham, Russian River Lad and Lumber Company, and the Madrona Land and Lumber Company), the placement of the railroad dictated the placement of the mills themselves (Bowen & Co. 1880:86–87; Gregory 1911:195).

With the establishment of the mills several small communities built up around them, largely populated by lumber and mill workers and their families. Duncan Mills and Guerneville were the largest of such company towns. Though the railroad was constructed for industry, as early as 1880 the NPC was advertised for its benefits to recreation (Bowen & Co. 1880:87–88).

The Development of the Russian River as a Resort Area

The railroad also played a significant role in the development of the Russian River area as a resort destination. The San Francisco and North Coast Railway, a narrow-gauge railroad similarly used to haul lumber and freight, began shuttling tourists from the Bay Area to the Russian River in the 1890s. This railway approached the Russian River from the east, connecting to Marin County via Petaluma and Santa Rosa. Following the decline of the local logging industry, the railroad encouraged resort development as the Russian River and the town of Monte Rio became accessible vacation destinations. A broad-gauge rail connected to Guerneville in 1877 for industrial purposes

was extended to Monte Rio and Duncan Mills for tourists in 1909. The extension of this line marked the importance of tourism as a source of revenue for the railroad as the lumber industry in the area declined.

Resorts sprang up along the rail lines and the Russian River became a summer vacation spot where people from San Francisco would come to escape the fog. In the early 1900s, "The Triangle Tour," departing from San Francisco, Oakland, and Sausalito brought people by trains or ferries to the Russian River area. The route earned its name by allowing people to travel by train one way and by ferry the other. Resorts such as Strehl's Riverview Hotel, the Glen Rita, Sully's, and the Monte Rio Hotel were built close to existing rail lines in locations with scenic river views. These resorts accommodated the tourists who would swell the population of Monte Rio from 2,000 to 5,000 during the summer months. In addition to large hotels and inns, resort-oriented subdivisions in Rio Nido, Guerneville, Guerneville Park, and Monte Rio were developed along the river. The summer tourist season was followed by the fishing season.

The height of the river resort era was the 1920s and early 1930s when most tourists arrived by train or ferry. On the Fourth of July weekend in 1923, 30,000 people passed through the Russian River area traveling by rail and ferry boat (no data was collected for automobile traffic). A forest fire in 1926 caused freight business on the broad-gauge line to decline, which further increased the importance of tourism for the railroad business in the Russian River area.

The resort communities constructed complexes for evening entertainment. The Redwood Bowl, on the north side of the Russian River bend at Monte Rio, had a dance hall, bowling alley, pool room, soft drink parlor, bicycle shop, and barbershop. Talent shows and evening dances were popular amusements (Wastell 1936:72). The original complex was constructed at an unknown date. It was reconstructed after a fire in 1933 (Oakland Tribune 1933:5).

By the mid-1910s, the automobile was gaining popularity as a means of travel for tourists to the Russian River. When the first bridge crossing at Monte Rio was completed in 1914, there were immediate discussions about modifying the design to accommodate automobile traffic (Sonoma West Times & News 1997:A9). In 1926, the bridge was altered and opened to automobile traffic (Petaluma Daily Morning Courier 1926:1). The traffic increased and the bridge could not support the volume of cars. Plans for a new bridge began in 1933 (Schubert and Munthe 2011:82–83).

The era of rail travel was coming to an end by the early 1930s as more accommodations were made for automobile access to the area. The trains ceased operation in 1935, replaced by roads and automobiles. With the completion of the Golden Gate Bridge in 1937, automobile owners throughout the region had greater access to points throughout the state and began exploring destinations farther from home, leading to a decline in popularity of the Russian River resort area. As automobile ownership in Northern California became more widespread, the popularity of the Russian River region as a vacation destination in proximity to San Francisco declined.

The Russian River area experienced a brief resurgence of popularity during World War II when soldiers stationed nearby would meet their partners at the resorts for the weekends and gas rations kept people from vacationing far. The revival did not last, and tourism in the region declined once again following the war when gas rationing was lifted. The popularity of the Russian River region as a vacation destination was further diminished when Sonoma County began dumping sewage upstream in the early 1950s. Up until the 1950s, the Russian River had been one of the finest rivers for steelhead fishing in the country. Later restrictions on sewage discharge and improvements in waste treatment have allowed the river to become safe for recreational use.

Another factor affecting the decline of tourism in the region was the frequency of disasters. Serious flooding in 1914 and 1915 destroyed or flooded many early resorts. The first documentation of the Pink Elephant restaurant was an article noting it was one of the few buildings to survive a flood in 1937 (Healdsburg Tribune 1937:1). A fire in 1980 consumed most of downtown Monte Rio. Floods in 1986, 1995, and 1998 resulted in widespread devastation in the area. Though tourists, bikers, and locals still frequented establishments in Monte Rio, many of the inns and resorts from the peak of the Russian River's era as a resort destination were demolished or closed because of the destruction and declining business following floods.

Archaeological Sensitivity Assessment

Before buried sites can be avoided, sampled, or otherwise evaluated, they must first be identified. Most buried sites are not found by conventional pedestrian surface surveys because they typically lack visible features that would indicate their present to an observer in the field (Bettis 1992:120). Thus, locating sites that are buried by natural sediment deposition is very difficult. In contrast, surface sites are located at or near the present ground surface, although in some cases they may be covered by artificial fill or otherwise obscured by modern development.

Potential for Historic-Era Archaeological Resources

While precontact buried and submerged site analysis relies primarily on geological, geomorphological, and environmental factors, subsurface historic-era site potential depends more on the written record, known developments and documented historic-era resources, and an understanding of modern and historical disturbances. A wide range of primary and secondary historical sources can be used to construct an understanding of historic land use within the APE. In this section, the degree to which the APE is sensitive for historic-era archaeological resources is based on the results of the records searches, the literature and map review, the presence of known resources located within and in close proximity to the APE, and the degree of previous disturbance. The potential that historic-era archaeological resources will be encountered is considered in relation to specific project activities, the location of project-related subsurface disturbances, and the vertical extent of project disturbances.

Historical documentation indicates that by at least 1877, the Project vicinity was beginning to undergo limited development as timber resources were exploited, small communities began to emerge, and the NPC railroad was established. While relevant maps dating to the late nineteenth century appear to be generalized, they indicate that the NPC railroad line may have bisected the southeastern-most portion of the APE at the intersection of Moscow Road and Main Street, following the alignment of present-day Moscow Road (Thompson 1877). Additionally, by 1898, the NPC Russian River Station No. 7 was located within or adjacent to the APE's southeastern extent (Reynolds & Proctor 1898). The railroad line was abandoned sometime prior to 1943 and the location of the line and station appear to have avoided considerable subsequent development, with the possibility that Moscow Road was established in the same location as the railroad line. This documented historical development and lack of significant subsequent disturbance indicates that the remains of the rail line and station, likely foundation or other structural elements, may still be present in these locations. As such, the portion of the APE that encompasses Moscow Road and its intersection with Main Street should be considered sensitive for subsurface historic-era resources. While this identified area is sensitive for historic-era structural remains, ground-disturbing Project activities are not proposed in this location, so the potential that subsurface historic-era archaeological features are encountered is very low.

The first bridge crossing at Monte Rio was completed in 1914, with alterations in 1926 and a full replacement by the current bridge by 1934 (Lyons 2021). No relevant maps from the early twentieth century were identified, so it is unknown where exactly the earlier bridge was located or how of the approach roads were organized; however, the project Structure Type Selection Report notes the original bridge was likely located along the same alignment as the 1934 Bridge, or slightly downstream (BCA 2020: 4). By 1934, with the completion of the existing bridge, the modern alignment of Bohemian Highway had also been established. Frequently in the early and mid-twentieth century, as roads were expanded or improved, earlier iterations of the roadbed were capped, often preserving it in place. As a result, all existing roadbeds in the APE are sensitive for earlier roadbeds underlying the modern road surface. Also, the parking lot west of Bohemian Highway on the north side of the river is sensitive, as a road was present in this location by at least 1943.

While the exact location of the 1914 bridge is unknown, along with its form and method of removal, it is likely that the 1914 bridge was located along the same alignment as the 1934 bridge, or slightly downstream (west); therefore, it is possible that remnant abutment and subsurface structural features remain in place and within the project APE. Additionally, rivers/riverbanks were often common refuse disposal locations. The Project's close vicinity to a community with commercial, residential, and leisure activities indicates that there is likely scattered historic-era refuse items within the riverbed and banks, covered with alluvial deposits. Large-scale refuse deposits in these contexts are often observed eroding from river banks and/or in surface remains, so deposits such as these are unlikely. In total, these factors indicate that the north and south riverbanks should be considered sensitive for subsurface historic-era bridge remains and possibly scattered domestic refuse. Where Project activities in this sensitive area include the installation of bents with cast in drilled hole piles, abutments, retaining walls, or other construction requiring ground-disturbing activities (including some staging areas), there is a potential to encounter these historic-era resource types.

By at least 1943, numerous structures are located within or along the margin of the APE, primarily along Main Street and along Highway 116 (River Road), west of Bohemian Highway. Some of the historic-era buildings mapped along Main Street in the mid-twentieth century appear to be commercial, and by the 1970s, they have been redeveloped (NETR 2021; USGS 1979). Today, these buildings are associated with Noel's Automotive Shop and Bartlett's grocery, both of which were determined exempt from further evaluation by Caltrans and JRP (Lyons 2021). The redevelopment of the 1970s likely destroyed any evidence of the earlier buildings/occupation, so this area is not considered sensitive for subsurface historic-era features. Mid-twentieth-century development on the north side of the river along Highway 116 also appears to have been redeveloped by the 1970s. While these buildings are now commercial, the function of the earlier buildings is unknown, and historical aerial imagery indicates they may be residential in nature, and therefore have a higher likelihood of having had associated subsurface refuse features (e.g., pits, privies, wells). In addition, redevelopment in the vicinity of some of the earlier buildings appears to have been limited to the construction of a parking lot, potentially capping subsurface features and leaving them intact. A small section of the northeast APE corresponding to this location should be considered sensitive. This area is identified as an approach needing road replacement to a maximum depth of 26.4 feet. As such, this area is sensitive with a potential to encounter subsurface historic-era resources.

In summary, while various areas within and adjacent to the project APE are identified as sensitive for subsurface historic-era resources, these areas only overlap with ground-disturbing project

activities (potential to encounter) along portions of the Bohemian Highway, and Main Street and along the riverbank in the proposed new bridge location.

Potential for Buried Precontact Archaeological Resources

Buried sites are typically associated with buried soils (paleosols) indicating formerly stable landforms. Dozens of buried Native American archaeological sites have been discovered in low-lying portions of the North Coast Ranges, but it is often hard to predict exactly where they may be located then they are covered by younger deposits, artificial fill, or built structures. It is known, however, that Native American archaeological sites are not distributed randomly throughout the landscape but tend to occur in specific geo-environmental settings (Foster et al. 2005:4; Hansen et al. 2004:5; Pilgram 1987; Rosenthal and Meyer 2004). Proximity to water, topographic setting, and past distributions of important plant and animal foods made some locations attractive and others unfavorable for past human use or occupation.

Within the North Coast Ranges, Native American occupation sites are most often associated with relatively level landforms located near streams, especially near perennial stream confluences, and near former lakes, springs, or wetlands where diverse plant and animal populations tended to be concentrated, as indicated by prior studies in the region (e.g., Meyer 2013; Meyer et al. 2011; Rosenthal and Meyer 2004, 2008; White 2003). These studies also show that large portions of the archaeological record in northern and central California are buried by younger Holocene-age deposits.

Landform Age

In general terms, landforms that are Holocene-age (<11,700 cal BP) have a certain “geologic potential” to contain buried sites because they formed after the region was widely occupied by precontact people. Conversely, older landscapes have little or no potential for buried sites because they were formed before the region was occupied by large numbers of people. Since human populations became progressively larger in later time periods, there is a higher probability for former land surfaces buried later in time to contain archaeological material than those buried earlier in time. Therefore, landform age can be used as a relative measure of the potential (i.e., probability) for buried archaeological sites not visible on the surface.

Far Western has developed a detailed map of the age of surface landforms based on digital soil survey data (NRCS 2012) that is referenced against an extensive radiocarbon database (Meyer and Rosenthal 2008; Meyer et al. 2010, 2011; Rosenthal and Meyer 2004). Within the project area, the surface soils are mapped as the Yolo sandy loam (0–2% slopes) that are associated with a variety of depositional alluvial landforms that are generally less than several hundred years old (i.e., latest Holocene), and in some cases are historical to modern in age (<100 cal BP). These surface soils generally overlie a buried soil at a depth of about one meter (~three feet) or more below the original ground surface.

Geological mapping that shows the northern and southern portions of the new bridge footprint are underlain by Holocene-age alluvial landforms. Most notably, a Quaternary terrace (Qt) is located at the south end of the bridge, along the west side of Dutch Bill Creek making it an excellent location for previous human occupation. Consequently, it is possible that some older archaeological sites may have been buried by the younger Holocene deposits in portions of the Archaeological APE. It should be noted, however, that no intact archaeological materials are expected to occur within the deposits that underlie the Russian River stream channel. Other factors that can influence the location of archaeological sites are described below.

Buried Site Sensitivity Model

A standardized model developed by Far Western to assess the potential for buried sites has proven effective for Cultural Resources Management studies conducted throughout the state (e.g., Byrd et al. 2010; Hildebrandt et al. 2012). The model assumes that archaeological deposits are not distributed randomly throughout the landscape, but instead tend to occur in specific geo-environmental settings (Foster et al. 2005:4; Hansen et al. 2004:5; Pilgram 1987; Rosenthal and Meyer 2004). For example, it is well known that precontact occupation sites are most often associated with level landforms near perennial streams, and particularly near the confluence of two or more streams (Pilgram 1987:44–47). Meyer (2013) assessed a variety of factors influencing precontact site location and found that distance to water, slope, and distance to watercourse confluence accurately predicted the majority of known precontact sites in California.

Within the current Archaeological APE, it appears the Russian River channel has followed roughly the same course for the past few hundred years or more, except for some lateral migration due to the formation of an alluvial point bar along the north side of the river. The buried site sensitivity model applies a landform-age multiplier to these three factors to determine buried site potential. The model indicates that the potential for buried sites is highest near the north bridge abutment, and it is high to highest near the south bridge abutment.

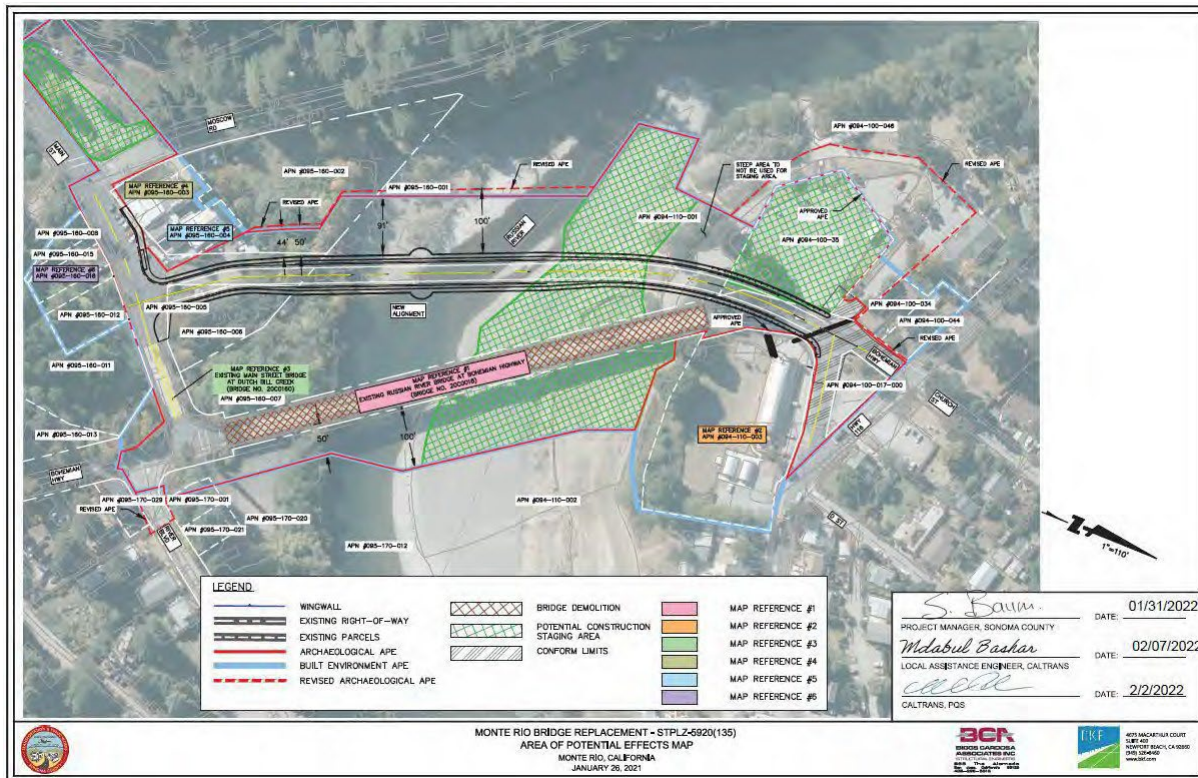
However, a subsurface geotechnical boring (B-5) obtained for the project indicates the north side is underlain by coarse-grain channel deposits that appear to lack soil development. The lack of developed soils or buried soils north of the river is consistent with the formation of an alluvial point bar that migrated southward over time at this location. Based on this site-specific data, it appears the north side of the Archaeological APE instead has a moderate to low potential to contain any intact archaeological deposits. In contrast, the south side of the river near the mouth of Dutch Bill Creek is underlain by fine-grain alluvium, which may contain one or more buried soil horizons that are Holocene in age. As such, the model appears to define the south side as having a high to highest potential for buried sites. Further, since the south abutment area appears to be covered by pavement and/or artificial fill deposits, that even the former historic-era ground surface is likely covered at this location.

Proposed Ground Disturbance within the APE

The APE (vertical and horizontal) is the area that has the potential to be directly or physically affected by the proposed project, including the temporary or permanent ROW that would be used for the project and any ancillary areas subject to project-related ground-disturbing activities, such as temporary access routes and staging areas. The horizontal APE includes all planned construction activity areas, proposed staging, and storage areas, TCEs, partial or full right-of-way acquisitions, and utility relocations. The maximum vertical APE is 130 feet deep where there will be cast in drilled hole piles, and a maximum of 15 feet of excavation where abutment walls and other bridge construction will occur. This includes excavation up to four feet below surface for the installation of the north and south abutments and wingwalls, six feet for the new access roads leading to the river, and two to four feet for the north and south approaches.

The relocation of a utility pole on the north side of SR 116 will likely be required.

Figure 4.5-1- Archaeological and Build Environment Area of Potential Effects Map



Historical Built Environment Assessment

According to guidance from the California Office of Historic Preservation, built environment features over 45 years of age maybe considered for federal, state and/or local designation (California Office of Historic Preservation n.d., 1995). The Built Environment APE extends beyond the Archaeological APE and includes all areas where the project could cause a potential effect (visual, audible, and atmospheric intrusions, and vibrations from construction-related activities, etc.) on historic properties. The Built Environment APE also includes the area where the existing Bohemian Highway Bridge would be demolished.

The total area of the Built Environment APE is approximately 13.6 acres. The boundaries of the Built Environment APE were drawn to include all the expected horizontal and vertical extents of the proposed project and include all anticipated permanent and temporary project effects.

There are six structures within the Built Environment APE, as illustrated in Table 4.5-1 below:

Table 4.5-1 Structures Over 45 Years of Age

| BUILDINGS AND STRUCTURES WITHIN APE | | | |
|-------------------------------------|--|-------------------------------------|-------------|
| Map Ref. # | Name | Address/Location | APN |
| 1 | Bohemian Highway Bridge (also known as Monte Rio Bridge) (Bridge Number 20C0018) | Bohemian Highway over Russian River | N/A |
| 2 | Rio Theater | 20396 Bohemian Hwy | 094-110-003 |
| 3 | Dutch Bill Creek Bridge (Bridge Number 20C0160) | 0.26 Miles From SR 116 | N/A |
| 4 | Noel's Automotive Shop (garage) | 9890 Main St | 095-160-003 |
| 5 | Bartlett's (grocery and green commercial building) | 9898 Main St | 095-160-004 |
| 6 | Pink Elephant (restaurant, but very modified) | 9895 Main St | 095-160-016 |

4.5.2 Regulatory Setting

a. Federal Regulations

National Register of Historic Places

The National Historic Preservation Act (NHPA) of 1966 established the National Register of Historic Places (NRHP) as "an authoritative guide to be used by federal, state, and local governments, private groups, and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment" (36 Code of Federal Regulations section 60.2). To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must also possess integrity of location, design, setting, materials, workmanship, feeling, and association. A property is eligible for the NRHP if it is significant under one or more of the following criteria:

- Criterion A:** It is associated with events that have made a significant contribution to the broad patterns of our history.
- Criterion B:** It is associated with the lives of persons who are significant in our past.
- Criterion C:** It embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction.
- Criterion D:** It has yielded, or may be likely to yield, information important in prehistory or history.

b. State Regulations

California Register of Historical Resources

CEQA requires that a lead agency determine whether a project could have a significant effect on historical resources and tribal cultural resources (PRC Section 21074 [a][1][A]-[B]). A historical resource is one listed in or determined to be eligible for listing in the California Register of Historical Resources (CRHR; PRC Section 21084.1), a resource included in a local register of historical resources (PRC Section 15064.5[a][2]), or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (PRC Section 15064.5[a][3]).

PRC Section 5024.1 requires an evaluation of historical resources to determine their eligibility for listing in the CRHR. The purpose of the register is to maintain listings of the state's historical resources and to indicate which properties are to be protected from substantial adverse change. The criteria for listing resources in the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP, as enumerated according to CEQA below:

PRC 15064.5(a)(3) [...] – Generally, a resource shall be considered by the lead agency to be “historically significant” if the resource meets the criteria for listing on the California Register of Historical Resources (PRC Section 5024.1; Title 14 CCR Section 4852) including the following:

- (1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
- (2) Is associated with the lives of persons important in our past
- (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values
- (4) Has yielded, or may be likely to yield, information important in prehistory or history

PRC 15064.5(a)(4) – The fact that a resource is not listed in or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to Section 5020.1[k] of the PRC), or identified in an historical resources survey (meeting the criteria in section 5024.1[g] of the PRC) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

PRC Section 15064.5(b) – A project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.

If a project can be demonstrated to cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to permit any or all these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required. (PRC Section 21083.2(a) – (c).)

PRC Section 21083.2(g) defines a unique archaeological resource as an artifact, object, or site about which it can be demonstrated clearly that, without merely adding to the current body of knowledge, there is a high probability that it does one or more of the following:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Impacts to significant cultural resources that affect the characteristics of any resource that qualify it for the NRHP or adversely alter the significance of a resource listed in or eligible for listing in the CRHR are considered a significant effect on the environment. These impacts could result from physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired. (*CEQA Guidelines* Section 15064.5[b][1].) Material impairment is defined as demolition or alteration in an adverse manner of those characteristics of an historical resource that convey its historical significance and that justify its inclusion or eligibility for inclusion in the CRHR. (*CEQA Guidelines* Section 15064.5[b][2][A].)

California Public Resources Code

Section 5097.5 of the California PRC states:

No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

As used in this PRC section, “public lands” means lands owned by or under the jurisdiction of the State or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, local agencies are required to comply with PRC Section 5097.5 for their own activities, including construction and maintenance, as well as for permit actions (e.g., encroachment permits) undertaken on public lands by others.

Codes Governing Human Remains

The disposition of human remains is governed by Health and Safety Code Section 7050.5 and PRC Sections 5097.94 and 5097.98 and falls within the jurisdiction of the Native American Heritage Commission (NAHC). If human remains are discovered, the county coroner must be notified within 48 hours, and there should be no further disturbance to the site where the remains were found. If the coroner determines the remains are Native American, the coroner is responsible to contact the NAHC within 24 hours. Pursuant to PRC Section 5097.98, the NAHC will immediately notify those persons it believes to be most likely descended from the deceased Native Americans so they can inspect the burial site and make recommendations for treatment or disposal.

c. Local Regulations

Sonoma County Code

The Sonoma County Board of Supervisors has declared that the preservation of structures, sites, and areas of historical, architectural, and aesthetic interest promotes the general welfare of the citizens of Sonoma County. The Sonoma County Landmarks Commission was established in 1974 and charged with the authority to designate Historic Landmarks and establish Historic Districts, in order to preserve historic resources within the County. Sonoma County Code Section 26-68-005, HD Historic Combining District states:

The purpose is to protect those structures, sites, and areas that are reminders of past eras, events and persons important in local, state, or national history, or which provide significant examples of architectural styles of the past, or which are unique and irreplaceable assets to the county and its communities.

All structures, sites, and areas associated with significant events or persons, or that are important examples of architectural styles, are eligible for consideration as a Sonoma County Historic Landmark. Proposals to alter, retrofit, or demolish any County Landmark or to build a new structure in a Historic District are subject to review by the Landmarks Commission, in accordance with Sonoma County Code Sections 26-68-020 – 26-68-030.

In January 1998, the Board of Supervisors designated 10 county-owned bridges as County Landmarks and rezoned them to a HD district, establishing a County Historic Bridges Thematic District (Resolution 98-0046). This Resolution also adopted procedures which outline the process for reviewing proposed changes to the historic bridges. Additional bridges have been added to the County Historic Bridges Thematic District since the 1998 resolution. In 2003 the *Monte Rio Bridge*, also known as The Bohemian Highway Bridge over the Russian River, was rezoned and added to the list of County Historic Bridges Thematic District. A total of Thirteen bridges are currently designated as County Landmarks as part of the Historic Bridges Thematic District.

On December 1, 2020, the Sonoma County Landmarks Commission reviewed the proposed project per the required procedures for reviewing proposed changes to bridges zoned as HD and for removal of historic landmarks. The Landmarks Commission considered the historical value of the Bohemian Highway Bridge, the impacts of removing the bridge to the Historic Bridges Thematic District, and alternatives to the proposed project including repairing the bridge. Ultimately, the Landmarks Commission recommended approval of the proposed project principally due to the absence of a feasible alternative. Additional discussion on alternatives is found in section six of this EIR.

Sonoma County General Plan

The current Sonoma County General plan contains the following goals and objectives related to cultural resources:

Goal OSRC-19: Protect and preserve significant archaeological and historical sites that represent the ethnic, cultural, and economic groups that have lived and worked in Sonoma County, including Native American populations. Preserve unique or historically significant heritage or landmark trees.

Objective OSRC-19.1: Encourage the preservation and conservation of historic structures by promoting their rehabilitation or adaptation to new uses.

Objective OSRC-19.2: Encourage preservation of historic building or cemeteries by maintaining a Landmarks Commission to review projects that may affect historic structures or other cultural resources.

Objective OSRC-19.3: Encourage protection and preservation of archaeological and cultural resources by reviewing all development projects in archaeologically sensitive areas.

Objective OSRC-19.4: Identify and preserve heritage and landmark trees.

Objective OSRC-19.5: Encourage the identification, preservation, and protection of Native American cultural resources, sacred sites, places, features, and objects, including historic or prehistoric ruins, burial grounds, cemeteries, and ceremonial sites. Ensure appropriate treatment of Native American and other human remains discovered during a project.

4.5.3 Impact Analysis

The significance thresholds used in this analysis are based on Appendix G of the *CEQA Guidelines*. For the purposes of this EIR, a significant impact would occur if implementation of the proposed project would result in any of the following conditions:

1. Cause a substantial adverse change in the significance of a historical resource as defined in *CEQA Guidelines* Section 15064.5
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to *CEQA Guidelines* Section 15064.5
3. Disturb any human remains, including those interred outside of dedicated cemeteries

| |
|---|
| Threshold: Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? |
|---|

Impact CUL-1 THE PROJECT HAS THE POTENTIAL TO CAUSE A SIGNIFICANT IMPACT ON A HISTORIC RESOURCE IF THE PROJECT WOULD CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF THAT RESOURCE. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Historical resources include properties eligible for listing in the NRHP or CRHR or listed as a Sonoma County Historic Landmark. As explained in PRC Section 15064.5, “[s]ubstantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.” Two properties in the APE were previously evaluated and determined ineligible for listing in the NRHP. Two additional properties were evaluated for listing in the NRHP and CRHR as part of the Historical Resources Evaluation Report associated with the project.

The following is a summary of properties located within the APE:

- 1) Historic properties listed in the NRHP: None.
- 2) Historic properties previously determined eligible for the NRHP: None.
- 3) Resources previously determined not eligible for the NRHP: Two
 - Dutch Bill Creek Bridge (Bridge No. 20C-0160)
 - Bohemian Highway Bridge (Bridge No. 20C-0018)

- 4) Historic properties determined eligible for the NRHP as a result of the current study: One
 - Rio Theater Located at 20396 Bohemian Highway
- 5) Resources determined not eligible for the NRHP as a result of the current study: Two
 - Pink Elephant Bar located at 9895 Main Street
 - Bohemian Highway Bridge (Bridge No. 20C-0018)
- 6) Resources for which further study is needed because evaluation was not possible (e.g., archaeological sites that require a test excavation to determine eligibility): None.

The Historical Resource Evaluation Report (HRER) for the project identified two historical resources for CEQA within the project APE, the Rio Theater and The Bohemian Highway Bridge.

The Rio Theater

The Rio Theater located at 20396 Bohemian Highway, Monte Rio is eligible for inclusion in the National Register of Historic Places at the local level of significance under Criterion C (see above NRHP). The theater is a historic property pursuant to Section 106 of the NRHP and a historical resource for the purposes of CEQA. The Rio Theater, built in 1949, is an excellent example of a Quonset hut theater and is eligible because it embodies the distinctive characteristics of this type, period, and method of construction. It is a rare remaining example of a Quonset hut adapted with an elaborate façade reflecting the Late Moderne and Streamline Moderne styles frequently used for theaters during this period. The boundaries for listing are limited to the footprint of the building. Contributing elements include its massing, setback and siting on the parcel, distinctive façade, barrel arch Quonset hut form, all windows and exterior doors. Noncontributing elements include the new rear patio that extends from the rear elevation. The Rio Theater is not designated under any local landmark programs.

Work is proposed that will affect the parcel associated with the Quonset hut. Property acquisition will be required on its frontage along Bohemian Highway. A retaining wall with a maximum exposed height of five feet that would taper down to grade level and a sidewalk would be installed along the curbside of the property to account for the rise in the roadway profile. These effects have been determined to not cause an adverse effect to the historic property and that no conditions to ensure that the undertaking would avoid causing an adverse effect are required. The Rio Theater would continue to convey its historic significance as an excellent example of a Quonset hut theater. Thus the impact under CEQA is less than significant.

Bohemian Highway Bridge (Bridge No. 20C-0018)

The Bohemian Highway Bridge over Russian River is designated as a local, Sonoma County historic landmark. The Structure was made a Sonoma County Landmark in 2003, with the associated Historical District (HD) zoning.

For the Purposes of CEQA, projects “included in a local register of historical resources” are historical resources. (Pub. Resources Code § 21084.1.) The Bohemian Highway Bridge is a resource listed in “a local register of historical resources”, and is therefore a historical resource under CEQA. Furthermore,

“[a] project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.” (Id.)

Demolition of the existing Bohemian Highway Bridge would have a substantial adverse change to this historic resource, indicating the project will have a significant effect on the environment and mitigation measures are required.

Mitigation Measures

CUL-1 Architectural History Mitigation

Cultural Resource Mitigation Measure CUL-1 Architectural History: Prior to implementing the proposed project, the DTPW shall provide an evaluation of the Bohemian Highway Bridge that includes a final historical documentation and a photographic archive of the bridge. The evaluation shall address the bridge in the context of the structure including photo-documentation and additional historical research necessary to complete the State of California’s Department of Parks and Recreation 523 forms, which constitute official documentation of historical resources for the State Office of Historic Preservation. Copies of documentation shall be provided to the Northwest Information Center (NWIC) of the California Historical Resources Information System, including the History Annex of the Sonoma County Library.

Significance After Mitigation

Even with implementation of Mitigation Measures CUL-1, the project will result in the demolition and removal of a historical resource. Therefore, even with mitigation to document the resource, impacts will not be reduced to a level that would be less than significant, and the impact will remain at a level that would be significant and unavoidable (SU).

| |
|--|
| Threshold: Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? |
|--|

Impact CUL-2 THE PROJECT HAS THE POTENTIAL TO CAUSE A SIGNIFICANT IMPACT ON ARCHAEOLOGICAL RESOURCES IF THE PROJECT WOULD CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF AN ARCHAEOLOGICAL RESOURCE. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

Ground-disturbing activities associated with the project have the potential to damage or destroy historic-age or prehistoric archaeological resources that may be present on or below the ground surface, when excavation depths exceed those attained previously for past development.

Far Western Staff Archaeologist conducted a records search for previously recorded resources and an initial survey of the Archaeological APE on December 9, 2020. The analysis did not identify previously recorded archaeological resources within the Archaeological APE. Using printed maps of the Archaeological APE, an iPad unit for field navigation and photographic documentation, and a submeter Global Positioning System (GPS) unit for resource documentation, archaeologists surveyed all accessible areas of the Archaeological APE in parallel transects spaced no more than 10 meters apart, with a cursory inspection of any exposed soils.

The Archaeological APE was determined to be moderately developed, with the only natural areas being the Russian River itself as well as its associated riverbanks, spits, and terraces. A large majority

of the developed Archaeological APE is paved with asphalt in the form of streets, bridges, and parking lots (Figure 4.5-1). In the unpaved areas, ground visibility was limited to graveled parking lots, landscaped planters, riverbanks/beaches, uplifted river terrace, and blackberry bramble. Exposed sediments were characterized by a light tan silty sand in the uplifted river terraces and large rounded river pebbles and small cobbles on the riverbanks/spits/beaches. These native sediments appeared to be relatively intact. The Archaeological APE includes native and non-native trees and plants, including Himalayan blackberry when adjacent to tress, which limited surface visibility. Overall, the survey covered 8.5 acres of the 11-acre Archaeological APE due to inaccessible areas (Figure 4.5-1). No archaeological resources were identified within the Archaeological APE during survey efforts.

The buried archaeological site sensitivity assessment for precontact archaeological resources concluded that the potential for buried sites is estimated to be high or highest at the location of the proposed vertical disturbances at the south end of the bridge. In addition, the historic-era archaeological research and analysis indicates that the APE is generally not sensitive for the presence of subsurface historic-era archaeological resources, and moderately sensitive for such resources where the road will be replaced along portions of the Bohemian Highway, Main Street and along the riverbank in the proposed new bridge location. Therefore, the project site has the potential to contain archaeological resources. Consequently, damage to or destruction of known or previously unknown, archaeological resources could occur because of the project. Therefore, mitigation measures would be required.

Mitigation Measures

CUL-2 Extended Phase I Testing

The project APE has been identified as sensitive by the Phase I Archaeological Survey Report (ASR). Sonoma County DTPW shall retain a qualified archaeologist to conduct an Extended Phase I (XPI) study to determine the presence/absence and extent of archaeological resources on the project site. The XPI proposal will be submitted to the Federal Funding agency (Caltrans Local Assistance) for review and approval as part of Section 106 of the NHPA. The proposal and subsequent testing should comprise a series of shovel test pits and/or augured units and/or mechanical trenching to establish the presence or absence, as well as the potential boundaries of archaeological site(s) on the project site. The qualified archaeologist and the Lead Agency (County) shall confer with local California Native American tribe(s) and any XPI work plans may be combined with a tribal cultural resources plan prepared under Mitigation Measure TCR-3, as indicated in section 4.17 of this EIR. A Tribe appointed Native American monitor may be present during the XPI study in accordance with Mitigation Measure TCR-4. TCR measures are discussed in detail within Section 4.17- Tribal Cultural Resources.

All archaeological excavation shall be conducted by a qualified archaeologist(s) under the direction of a principal investigator meeting the SOI's PQS for archaeology (National Park Service 1983). If an XPI report is prepared, it shall be submitted to Sonoma County for review and approval prior to the start of any construction activities. Interested tribes shall be consulted for comments on the final XPI report as part of AB52 and Section 106 of the NHPA consultations. Recommendations contained therein shall be implemented for all ground disturbance activities.

CUL-3 Archaeological Site Avoidance

Any identified archaeological sites (determined after implementing Mitigation Measures CUL-2) shall be avoided by project-related construction activities, where feasible. A barrier (temporary fencing) and flagging should be placed between the work location and any resources within 50 feet of a work location to minimize the potential for inadvertent impacts.

CUL-4 Phase II Site Evaluation

If the results of the XPI (Mitigation Measures CUL-2) indicate the presence of archaeological resources that cannot be avoided by the project (Mitigation Measure CUL-3), then the qualified archaeologist will conduct a Phase II investigation to determine if intact deposits remain and if they may be eligible for listing under the CRHR and/or NRHP or qualify as unique archaeological resources. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s) regarding the Phase II work. If applicable, a Native American monitor shall be present during the Phase II investigation in accordance with Mitigation Measure TCR-4.

A Phase II evaluation shall occur in conformance with the Caltrans Standard Environmental Reference and per the Local Assistance Program Guidelines. The Evaluation shall include any necessary archival research to identify significant historical associations and mapping of surface artifacts, collection of functionally or temporally diagnostic tools and debris, and excavation of a sample of the cultural deposit. The sample excavation will characterize the nature of the sites, define the artifact and feature contents, determine horizontal and vertical boundaries, and retrieve representative samples of artifacts and other remains.

If the archeologist and, if applicable, a Native American monitor (see Mitigation Measure TCR-4) or other interested tribal representative determine it is appropriate, cultural materials collected from the site shall be processed and analyzed in a laboratory according to standard archaeological procedures. The age of the materials shall be determined using radiocarbon dating and/or other appropriate procedures; lithic artifacts, faunal remains, and other cultural materials shall be identified and analyzed according to current professional standards. The significance of the sites shall be evaluated according to the criteria of the CRHR and NHRP. The results of the investigations shall be presented in a technical report following the standards of the California Office of Historic Preservation publication "Archaeological Resource Management Reports: Recommended Content and Format (1990 or latest edition)." If determined necessary, recommendations in the Phase II report shall be implemented for all ground disturbance activities.

CUL-5 Phase III Data Recovery

Should the results of the Phase II site evaluation (Mitigation Measure CUL-4) yield resources that meet CRHR/ NRHP significance standards and if the resource cannot be avoided by project construction in accordance with Mitigation Measure CUL-4, the Sonoma County DTPW shall ensure that all feasible recommendations (as defined in *CEQA Guidelines* Section 15364) for mitigation of archaeological impacts are incorporated into the final design prior to construction. Any necessary Phase III data recovery excavation, conducted to exhaust the data potential of significant archaeological sites, shall be carried out by a qualified archaeologist meeting the SOI standards for archaeology according to a research design approved by the County and Caltrans Local Assistance prepared in advance of fieldwork and using appropriate archaeological field and laboratory methods consistent with the California Office of Historic Preservation Planning Bulletin 5 (1991), Guidelines for Archaeological Research Design, or the latest edition thereof. If the archaeological resource(s) of

concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s) and any Phase III work plans may be combined with a tribal cultural resources plan prepared under Mitigation Measure TCR-3. If applicable, a Native American monitor shall be present in accordance with Mitigation Measure TCR-4.

As applicable, the final Phase III Data Recovery reports shall be submitted to Sonoma County prior to starting project construction. Recommendations contained therein shall be implemented throughout all ground disturbance activities.

CUL-6 Cultural Resources Monitoring

If recommended by XPI, Phase II, or Phase III studies (Mitigation Measures CUL-2, CUL-3, CUL-4, and/or CUL-5), the project applicant shall retain a qualified archaeologist to monitor project-related, ground-disturbing activities. If archaeological resources are encountered during ground-disturbing activities, Mitigation Measures CUL-2 through CUL-5 shall be implemented, as appropriate. The archaeological monitor shall coordinate with any Native American monitor as required by Mitigation Measure TCR-4.

CUL-7 Unanticipated Discovery of Archaeological Resources

If archaeological resources are encountered during ground-disturbing activities, work within 50 feet shall be halted and the project applicant shall retain an archaeologist meeting the SOI's PQS for archaeology (National Park Service 1983) immediately to evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for CRHR and NRHP eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. If the resource is of Native American origin, implementation of Mitigation Measures TCR-1 through TCR-4 may be required. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the County and Caltrans Local Assistance for review and approval. If determined necessary, recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.

Significance After Mitigation

Implementation of Mitigation Measures CUL-2 through CUL-7 would reduce impacts to archaeological resources to less than significant levels by ensuring the avoidance of archeological resources to the extent feasible, or by identifying, evaluating, and preservation of archaeological resources that may be impacted.

| |
|---|
| Threshold: Would the Project disturb any human remains, including those interred outside of formal cemeteries? |
|---|

Impact CUL-3 THE DISCOVERY OF HUMAN REMAINS IS ALWAYS A POSSIBILITY DURING GROUND-DISTURBING ACTIVITIES. GROUND DISTURBANCE BY THE PROJECT MAY DISTURB OR DAMAGE UNKNOWN HUMAN REMAINS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT WITH ADHERENCE TO EXISTING REGULATIONS.

Regulations exist to address the discovery of human remains. If human remains are found, the California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the county coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. If an unanticipated discovery of human remains occurs, the county coroner

must be notified immediately. If the human remains are determined to be prehistoric, the coroner will notify the NAHC, which will determine and notify a most likely descendant, who shall complete an inspection of the site and provide recommendations for treatment within 48 hours of being granted access. With adherence to existing regulations, the archaeological resources mitigation measures identified above, the Project impacts would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

Compliance with existing regulations and archaeological resources mitigation measures would reduce project impacts to human remains to less than significant levels by ensuring proper identification and treatment of any human remains that may be present on the Potential Sites.

4.5.4 Cumulative Impacts

The following cumulative impacts discussion focuses on whether the impacts of the proposed Project are cumulatively considerable within the context of impacts caused by other past, present, or reasonably foreseeable future projects to historic bridges. The cumulative impact scenario considers other county projects within the area of the proposed project that have the potential to contribute to cumulatively considerable impacts.

As discussed previously in this section, the proposed project would remove and replace the existing Bohemian Highway Bridge that is included in a Historic Bridge Thematic District that could reduce the pooled value of the remaining district. The Bohemian Highway Bridge is one of nineteen extant metal truss bridges in Sonoma County (Baughn, 2012). Within the western portion of the County four other HD zones bridges exist, including at Haupt Creek, the Hacienda Bridge, Wohler Road and the Jimtown Bridge. For Wohler, significant effort has gone into retaining the Historic truss structure and the County plans to retrofit the substructure in an effort to extend the service life of the historic bridge.

Future projects proposing alterations to locally significant historic resources would require environmental review and compliance with the procedures established for Landmarks Commission review of proposed work. In addition, all HD bridge-related projects require final review and approval by the Board of Supervisors on a case-by-case basis on the needs and merits of the individual project. Such projects would likely be subject to mitigation measures similar to those imposed on this project.

Although the loss of the Bohemian Highway Bridge is individually considered to be a significant impact to a historical resources, the loss of the bridge would not result in cumulatively considerable contribution and would be a less than significant cumulative impact.

Future projects and cumulative projects in the region would involve ground-disturbing activities which could encounter human remains. If human remains are found, the proposed project and cumulative projects would be required to comply the State of California Health and Safety Code Section 7050.5, as described in Impact CUL-3, above. With adherence to existing regulations relating to human remains, cumulative impacts would be less than significant, and the project's impacts would not be cumulatively considerable.

This page intentionally left blank.

Energy Table of Contents

| | | |
|-------|--------------------------|-------|
| 4.6 | Energy | 4.6-1 |
| 4.6.1 | Setting..... | 4.6-1 |
| 4.6.2 | Regulatory Setting | 4.6-3 |
| 4.6.3 | Impact Analysis | 4.6-7 |
| 4.6.4 | Cumulative Impacts | 4.6-9 |

Tables

| | | |
|-------------|--|-------|
| Table 4.6-1 | Annual and Daily Transportation Energy Consumption in Sonoma County. | 4.6-2 |
|-------------|--|-------|

4.6 Energy

This section evaluates the proposed project for the inefficient, wasteful, and unnecessary consumption of energy.

4.6.1 Setting

Energy relates directly to environmental quality as energy use can adversely affect air quality and other natural resources. Fossil fuels are burned to create electricity to power homes and vehicles, which creates heat. A discussion of transportation energy use relates to the fuel efficiency of cars and trucks, and the availability and use of public transportation, the choice of different travel modes (auto, carpool, and public transit), and the miles traveled by these modes. Construction and routine operation and maintenance of infrastructure also consume energy, as do residential land uses, typically in the form of natural gas and electricity.

a. Energy Supply

Natural gas-fired generation has dominated electricity production in California for many years. In 2017, however, the two largest sources of energy produced in California were crude oil at approximately 996.4 trillion British thermal units (Btu), and renewable energy sources at approximately 1,085.5 trillion Btu, while natural gas production was 240.2 trillion Btu. Other sources of energy produced in California include geothermal, nuclear power, natural gas, and biofuel (Energy Information Administration [EIA] 2017a). Sonoma County has two inactive Petaluma and Cotati Gas oil fields, and the Geysers geothermal well area that extends into Lake and Mendocino counties (California Department of Conservation, Division of Oil, Gas & Geothermal Resources 2020).

b. Energy Consumption and Sources

Total energy consumption in the United States (U.S.) in 2018 was approximately 101.3 quadrillion Btu (EIA 2019a). In 2018, petroleum provided approximately 36 percent of that energy, with other sources of energy coming from natural gas (approximately 31 percent), coal (approximately 13 percent), total renewable sources (approximately 11 percent), and nuclear power (approximately 8 percent). On a per capita basis in 2017, California was ranked the fourth lowest state in terms of total energy consumption (200.0 million Btu [MMBtu] per person), or about 33 percent less than the U.S. average per capita consumption of 300.2 MMBtu per person (EIA 2017b).

Electricity and Natural Gas

Most of the electricity generated in California is from natural gas-fired power plants, which provided approximately 35 percent of total electricity generated in 2018 (California Energy Commission [CEC] 2018d). In 2018, California produced 68 percent of the electricity it used and imported the rest from outside the state. In the same year, California used 288,256 gigawatt hours (GWh) of electricity, with 195,265 GWh produced in-state (EIA 2018).

Sonoma County as a whole consumed approximately 111 million therms of natural gas in 2018 in both residential and non-residential uses (CEC 2018a). Sonoma County also consumed approximately 2,928 GWh of electricity in 2018 from residential and non-residential uses (CEC 2018b).

Two electricity providers serve Sonoma County: Sonoma Clean Power (SCP) and Pacific Gas and Electric Company (PG&E). PG&E is also the natural gas provider for the entire county. SCP provides clean energy that is 97 percent carbon free, sourced from renewable energy (25 percent wind, 18 percent geothermal, and 8 percent solar), carbon-free hydroelectric power (46 percent), and general system power (3 percent) (SCP 2020). In conjunction with the utility companies, the California Public Utilities Commission (CPUC) is involved in energy conservation programs.

Petroleum

Energy consumed by the transportation sector accounts for roughly 40.3 percent of California’s energy demand, amounting to approximately 3,172.2 trillion Btu in 2017 (EIA 2017c). Petroleum-based fuels are used for approximately 98.4 percent of the state’s transportation activity (EIA 2017d). Most gasoline and diesel fuel sold in California for motor vehicles is refined in California to meet state-specific formulations required by the California Air Resources Board (CARB). California’s transportation sector, including on-road and rail transportation, consumed approximately 683 million barrels of petroleum fuels in 2017 (EIA 2020).

As shown in Table 4.6-1, approximately 214 million gallons of fuel were consumed in the county in 2018, of which approximately 192 million gallons were gasoline and approximately 22 million gallons were diesel fuel (CEC 2018c). This equates to approximately 0.59 million gallons of fuel per day or 1.2 gallons of fuel per person per day, based on a 2018 countywide population of 502,866 people (California Department of Finance 2019).

Table 4.6-1 Annual and Daily Transportation Energy Consumption in Sonoma County

| Fuel Type | 2018 Annual Fuel Use (million gallons) | 2018 Daily Fuel Use (million gallons) | 2018 Daily Energy Use (billions of Btu) | 2018 Daily per Capita Energy Use (thousands of Btu) |
|------------------|---|--|--|--|
| Gasoline | 192 | 0.53 | 57.7 | 114.7 |
| Diesel | 22 | 0.06 | 7.7 | 15.3 |
| Total | 214 | 0.59 | 65.4 | 130.0 |

Notes: Btu = British thermal units

Source: CEC 2018c

According to the CEC, one gallon of gasoline is equivalent to approximately 109,786 Btu, while one gallon of diesel is equivalent to approximately 127,460 Btu (Schremp 2017). Based on this formula, approximately 65.4 billion Btu in transportation fuel were consumed per day in 2018 in Sonoma County (see Table 4.6-1).

Alternative Fuels

A variety of alternative fuels are used to reduce petroleum-based fuel demand. The use of these fuels is encouraged through various statewide regulations and plans (e.g., Low Carbon Fuel Standard and Health and Safety Code Section 38566 [Senate Bill (SB) 32]). Conventional gasoline and diesel may be replaced, depending on the capability of the vehicle, with many alternative fuels including the following:

Hydrogen is being explored for use in combustion engines and fuel cell electric vehicles. The interest in hydrogen as an alternative transportation fuel stems from its clean-burning qualities, its potential

for domestic production, and the fuel cell vehicle's potential for high efficiency (two to three times more efficient than gasoline vehicles). Currently, 41 open hydrogen refueling stations are in California, but none are in Sonoma County (California Fuel Cell Partnership 2020).

Biodiesel is a renewable alternative fuel that can be manufactured from vegetable oils, animal fats, or recycled restaurant greases. Biodiesel is biodegradable and cleaner-burning than petroleum-based diesel fuel. Biodiesel can run in any diesel engine generally without alterations but fueling stations have been slow to make it available. There are 30 biodiesel refueling stations in California, six of which are in Sonoma County (Drive Biodiesel 2020).

Electricity can be used to power electric and plug-in hybrid electric vehicles directly from the power grid. The electricity grid usually provides electricity used to power vehicles, which store it in the vehicle's batteries. The electricity provided by SCP is 97 percent carbon free (SCP 2020). Fuel cells are being explored to use electricity generated on board the vehicle to power electric motors. Electrical charging stations are throughout Sonoma County, including in Bodega Bay, Cotati, Forestville, Fulton, Geyserville, Glen Ellen, Healdsburg, Petaluma, Rohnert Park, Santa Rosa, Sebastopol, Sonoma, and Windsor (County of Sonoma 2020).

c. Energy and Fuel Efficiency

Though the demand for gasoline and diesel fuel is rising because of population growth and limited mass transit, the increase in demand can be offset partially by efficiency improvements. Land use policies that encourage infill and growth near transit centers (e.g., following SB 375, the Sustainable Communities and Climate Protection Act of 2008), improvements to fuel efficiency, and gradual replacement of the vehicle fleet with new, more fuel-efficient cars will all reduce fuel use. In the future, increasing gasoline prices may apply downward pressure to gasoline demand in the state.

4.6.2 Regulatory Setting

Programs and policies at the state and national levels have emerged to bolster the previous trend towards energy efficiency, as discussed below.

a. Federal Regulations

Energy Policy Conservation Act and Corporate Average Fuel Economy

The Energy Policy Conservation Act (Corporate Average Fuel Economy [CAFE]) of 1975 established nationwide fuel economy standards to conserve oil. Pursuant to this Act, the National Highway Traffic and Safety Administration, part of the U.S. Department of Transportation, is responsible for revising existing fuel economy standards and establishing new vehicle fuel economy standards.

The CAFE program was established to determine vehicle manufacturer compliance with the government's fuel economy standards. Compliance with CAFE standards is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the U.S.

National Energy Policy Act of 1992

The National Energy Policy Act of 1992 (EPACT92) calls for programs that promote efficiency and the use of alternative fuels. EPACT92 requires certain federal, state, and local governments and private operators to stock vehicle fleets with a percentage of light duty alternative fuel vehicles each year. In addition, EPACT92 has financial incentives: federal tax deductions will be allowed for businesses

and individuals to cover the incremental cost of alternative fuel vehicles. EFACT92 also requires states to consider a variety of incentive programs to help promote alternative fuel vehicles.

Energy Policy Act of 2005

The Energy Policy Act of 2005 provides renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act is designed to improve vehicle fuel economy and help reduce U.S. dependence on oil. It expands the production of renewable fuels, reducing dependence on oil, and confronting global climate change. Specifically, it does the following:

1. Increases the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard that requires fuel producers to use at least 36 billion gallons of biofuel in 2022, which represents a nearly five-fold increase over current levels
2. Reduces U.S. demand for oil by setting a national fuel economy standard of 35 miles per gallon by 2020 – an increase in fuel economy standards of 40 percent over those in 2007

Safer Affordable Fuel-Efficient Vehicles Rule

The Safer Affordable Fuel-Efficient Vehicles Rule, issued March 31, 2020, sets fuel economy and carbon dioxide standards that increase 1.5 percent in stringency each year from model years 2021 through 2026. These standards apply to both passenger cars and light trucks and are a reduction in stringency from the 2012 standards which would have required increases of about 5.0 percent per year. This rule is anticipated to result in a 40.4 mile per gallon industry average for 2026.

b. State Regulations

Warren-Alquist Act

The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as the CEC. The Act established a State policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. The CPUC regulates privately owned utilities in the energy, rail, telecommunications, and water fields.

Assembly Bill 2076: Reducing Dependence on Petroleum

Pursuant to Assembly Bill (AB) 2076 (Chapter 936, Statutes of 2000; codified as Public Resources Code Sections 25720-25721), the CEC and CARB prepared and adopted in 2003 a joint agency report, Reducing California's Petroleum Dependence. Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030; significantly increase the efficiency of motor vehicles; and reduce per capita vehicle miles traveled (VMT). One of the performance-based goals of AB 2076 is to reduce petroleum demand to 15 percent below 2003 demand. Furthermore, in response to the CEC's 2003 and 2005 Integrated Energy Policy reports, the Governor directed the CEC to take the lead in developing a long-term plan to increase alternative fuel use.

Integrated Energy Policy Report

SB 1389 (Chapter 568, Statutes of 2002) requires the CEC to conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and price to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety.

California Renewables Portfolio Standard Program

In 2018, the California Renewables Portfolio Standard (SB 100) was signed into law, which increased the renewable portfolio standard (RPS) to 60 percent by 2030 (i.e., that 60 percent of electricity retail sales must be served by renewable sources by 2030) and requires all the state's electricity to come from carbon-free resources by 2045.

Senate Bill 350: Clean Energy and Pollution Reduction Act of 2015

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) requires the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources to be increased to 50 percent by December 31, 2030. The Act also requires doubled energy efficiency savings in electricity and natural gas for retail customers through increased efficiency and conservation by December 31, 2030.

Assembly Bill 1493: Reduction of Greenhouse Gas Emissions

AB 1493 (Chapter 200, Statutes of 2002), known as the "Pavley bill," amended Health and Safety Code sections 42823 and 43018.5 and requires CARB to develop and adopt regulations that achieve maximum feasible and cost-effective reduction of greenhouse gas (GHG) emissions from passenger vehicles, light-duty trucks, and other vehicles used for noncommercial personal transportation in California.

Implementation of new regulations prescribed by AB 1493 required the State of California to apply for a waiver under the federal Clean Air Act. Although the U.S. Environmental Protection Agency (USEPA) initially denied the waiver in 2008, USEPA approved a waiver in June 2009, and in September 2009, CARB approved amendments to its initially adopted regulations to apply the Pavley standards that reduce GHG emissions to new passenger vehicles in model years 2009 through 2016. According to CARB, implementation of the Pavley regulations is expected to reduce fuel consumption while also reducing GHG emissions (CARB 2020).

Energy Action Plan

The first Energy Action Plan (EAP) emerged in 2003 from a crisis atmosphere in California's energy markets. The State's three major energy policy agencies (CPUC, CEC, and the Consumer Power and Conservation Financing Authority [established under deregulation and now defunct]) came together to develop one high-level, coherent approach to meeting California's electricity and natural gas needs. It was the first time that energy policy agencies formally collaborated to define a common vision and set of strategies to address California's future energy needs. They emphasized the importance of the impacts of energy policy on California's environment.

In the October 2005 EAP II, the CEC and CPUC updated their energy policy vision by adding some important dimensions to the policy areas included in the original EAP, such as the emerging importance of climate change, transportation-related energy issues, and research and development

activities. The CEC adopted an update to the EAP II in February 2008 that supplements earlier EAPs and examines the State's ongoing actions in the context of global climate change.

Assembly Bill 1007: State Alternative Fuels Plan

AB 1007 (Chapter 371, Statutes of 2005) required the CEC to prepare a State plan to increase the use of alternative fuels in California. The CEC prepared the State Alternative Fuels Plan (SAF Plan) in partnership with CARB and in consultation with other State, federal, and local agencies. The SAF Plan presents strategies and actions California must take to increase the use of alternative, nonpetroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The SAF Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuel use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Bioenergy Action Plan, Executive Order S-06-06

Executive Order (EO) S-06-06, April 25, 2006, establishes targets for the use and production of biofuels and biopower, and directs State agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The EO establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels in California by 2010, 40 percent by 2020, and 75 percent by 2050. EO S-06-06 also calls for the State to meet a target for use of biomass electricity. The 2011 Bioenergy Action Plan identifies those barriers and recommends actions to address them so that the State can meet its clean energy, waste reduction, and climate protection goals. The 2012 Bioenergy Action Plan updates the 2011 Plan and provides a more detailed action plan to achieve the following goals:

1. Increase environmentally and economically sustainable energy production from organic waste
2. Encourage development of diverse bioenergy technologies that increase local electricity generation, combined heat and power facilities, renewable natural gas, and renewable liquid fuels for transportation and fuel cell applications
3. Create jobs and stimulate economic development, especially in rural regions of the State
4. Reduce fire danger, improve air and water quality, and reduce waste

c. Local Regulations

Sonoma County General Plan

The Sonoma County General Plan Open Space and Resource Conservation Element includes goals and policies that would reduce energy use in the County. Goals and policies from the County General Plan are provided below.

Goal OSRC-14: Promote energy conservation and contribute to energy demand reduction in the County.

Objective OSRC-14.2: Encourage County residents and businesses to increase energy conservation and improve energy efficiency.

Objective OSRC-14.3: Reduce the generation of solid waste and increase solid waste reuse and recycling.

Policy OSRC-14d: Support project applicants in incorporating cost effective energy efficiency that may exceed State standards.

Goal OSRC-15: Contribute to the supply of energy in the County primarily by increased reliance on renewable energy sources.

Objective OSRC-15.2: Promote the use of renewable energy and distributed energy generation systems and facilities in new development in the County.

4.6.3 Impact Analysis

a. Methodology and Significance Thresholds

Significance Thresholds

An energy-related impact is considered significant if the proposed project would result in one or more of the following conditions:

1. Wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation
2. Conflict with or obstruct a State or local plan for renewable energy or energy efficiency

Methodology

Public Resources Code Section 21100(b)(3) states that an EIR shall include “mitigation measures proposed to minimize significant effects on the environment, including, but not limited to, measures to reduce the wasteful, inefficient, and unnecessary consumption of energy.” The physical environmental impacts associated with the use of energy, including the generation of electricity and burning of fuels, have been accounted for in Section 4.3, *Air Quality*, and Section 4.8, *Greenhouse Gas Emissions*.

Energy consumption is analyzed herein in terms of construction and operational energy. Construction energy demand accounts for anticipated energy consumption during construction of the proposed project, such as fuel consumed by construction equipment and construction workers’ vehicles traveling to and from the construction site. Operational energy demand accounts for the anticipated energy consumption during operation of the project, which would be minimal, limited to the energy required to power lights on the bridge in the evening

b. Project Impacts and Mitigation Measures

| |
|--|
| Threshold: Would the Project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? |
|--|

Impact E-1 THE PROJECT WOULD NOT RESULT IN A SIGNIFICANT ENVIRONMENTAL IMPACT DUE TO THE WASTEFUL, INEFFICIENT, OR UNNECESSARY CONSUMPTION OF ENERGY RESOURCES. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Demolition and Construction

Project construction would result in short-term increased energy requirements through the use of gasoline and diesel fuels for operation of heavy-duty construction equipment and vehicles. The use of construction equipment would result in a temporary increase in fuel consumption in the project area relative to the current conditions. As discussed in Section 4.3 *Air Quality*, construction emissions do not exceed the County's thresholds of significance.

Energy use during demolition and construction would be temporary, and construction equipment used would be typical of similar-sized construction projects in the region. Construction contractors are required to comply with the provisions of CCR Title 13, sections 2449 and 2485, prohibiting diesel-fueled commercial and off-road vehicles from idling for more than five minutes, minimizing unnecessary fuel consumption. Construction equipment would be subject to the USEPA Construction Equipment Fuel Efficiency Standard, which would minimize inefficient fuel consumption. These construction equipment standards (i.e., Tier 4 efficiency requirements) are contained in 40 Code of Federal Regulations Parts 1039, 1065, and 1068. Electrical power would be consumed during demolition and construction activities, and the demand, to the extent required, would be supplied from existing electrical infrastructure in the area.

Overall, demolition and construction activities would not have any adverse impact on available electricity supplies or infrastructure. Demolition and construction activities would utilize fuel-efficient equipment consistent with State and federal regulations and would comply with state measures to reduce the inefficient, wasteful, or unnecessary consumption of energy. These practices would result in efficient use of energy by construction facilitated by the project.

Furthermore, in the interest of cost efficiency, construction contractors would not utilize fuel in a manner that is wasteful or unnecessary. Therefore, project demolition and construction activities would not result in potentially significant environmental effects due to the wasteful, inefficient, or unnecessary consumption of energy, and impacts would be less than significant.

Operation

Energy demand from project operation would be limited to operation of lights during the evening, and maintenance requirements. The replacement structure would have more energy efficient lighting and maintenance requirements would be reduced compared to the existing structure. The new structure will have bicycle lanes and unobstructed walkways, which the current bridge does not have. The new structure will encourage alternative modes of transportation, including walking and bicycling, potentially reducing VMT within the project area. Regardless, operation of the new bridge should not increase VMT as it will replace the existing bridge. Therefore, project operation will not increase energy demand and any impact would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold: Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Impact E-2 THE PROJECT WOULD NOT CONFLICT WITH OR OBSTRUCT AN APPLICABLE RENEWABLE ENERGY OR ENERGY EFFICIENCY PLAN. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

As shown in Table 4.6-1, the project would be consistent with State renewable energy and energy efficiency plans. The proposed project would be consistent with the County's adopted energy conservation and efficiency strategies contained in its General Plan. The new bridge will use more energy efficient lights compared to the existing bridge's lighting. As discussed in Section 4.6.2, *Regulatory Setting*, several state plans as well as the County's adopted General Plan include energy conservation and energy efficiency strategies intended to enable the State and the County to achieve GHG reduction and energy conservation goals. A full discussion of the proposed project's consistency with GHG reduction plans is included in Section 4.8, *Greenhouse Gas Emissions*. Therefore, this impact would be less than significant, and no mitigation is required.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

4.6.4 Cumulative Impacts

A project's environmental impacts are "cumulatively considerable" if the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (*CEQA Guidelines* Section 15065[a][3]). The geographic scope for energy consumption is the Project area. The project would not result in significant impacts related to energy consumption. The existing baseline for energy use is a bridge, and the project will replace the existing bridge with a new bridge. Therefore, the project would not have cumulative impacts with respect to consumption of energy or consistency with renewable energy and energy efficiency plans.

This page intentionally left blank.

Geology and Soils Table of Contents

| | | |
|-------|--------------------------|--------|
| 4.7 | Geology and Soils | 4.7-1 |
| 4.7.1 | Setting..... | 4.7-1 |
| 4.7.2 | Regulatory Setting | 4.7-8 |
| 4.7.3 | Impact Analysis | 4.7-11 |
| 4.7.4 | Cumulative Impacts | 4.7-20 |

Tables

| | | |
|-------------|--|--------|
| Table 4.7-1 | Potential Site Areas Subject to Mitigation | 4.7-17 |
|-------------|--|--------|

Figures

| | | |
|--------------|-----------------------------|-------|
| Figure 4.7-1 | Fault mapping | 4.7-4 |
| Figure 4.7-2 | Site Geologic mapping | 4.7-5 |

4.7 Geology and Soils

This section evaluates the potential impacts relating to geology and soils impacts associated with implementation of the proposed project. The data used to inform this section is based in part by a geotechnical investigation for the Project Foundation Type Selection Report.

4.7.1 Setting

a. Regional Geology

The topography in Sonoma County is varied, including several mountain ranges, distinctive valleys, and coastal terraces. The county is bounded on the south by the San Pablo Bay and associated wetlands. The Cotati and Petaluma Valleys create the wide basin stretching from Santa Rosa to the Bay. Rolling hills and grasslands predominate here, as well as in Marin County to the south. The rugged Mayacamas and Sonoma Mountains geographically form the eastern boundary and physically separate Sonoma County from Lake and Napa Counties. The Sonoma Valley runs north-south between the Sonoma Mountains on the west and the taller Mayacamas Mountains to the east. The Geysers geothermal field, located in the northeastern section of the county, extends into both Sonoma and Lake Counties. The Mendocino Highlands form a common geographic unit with Mendocino County to the north. The Alexander Valley runs from northwest to southeast, bounded on the east by the Mayacamas Mountains and on the west by the Coast Range. The Pacific Ocean forms the western county boundary, including an interesting assemblage of steep hills, marine terraces, beaches, and offshore sea stacks (County of Sonoma 2006).

Ongoing tectonic forces resulting from the collision of the North American Plate with the Pacific Plate, combined with more geologically recent volcanic activity, have resulted in mountain building and down warping of parallel valleys. The margin of the two tectonic plates is defined by the San Andreas Fault system: a broad zone of active, dormant, and inactive faults dominated by the San Andreas Fault which trends along the western margin of the county. This fault system results in the northwestern structural alignment that controls the overall orientation of the county's ridges and valleys. The land has been modified by more recent volcanic activity, evidenced by Mount St. Helena that visually dominates the northeastern part of the county. Erosion, sedimentation, and active faulting occurring in recent times have further modified Sonoma County's landscape to its current form (County of Sonoma 2006).

The geology of Sonoma County is a result of the past tectonic, volcanic, erosional, and sedimentation processes of the California Coast Range geomorphic province (California Geological Survey [CGS] 2002). A geomorphic province is a region of unique topography and geology that is readily distinguished from other regions based on its landforms and diastrophic history. The Coast Ranges extend about 600 miles from the Oregon border south to the Santa Ynez River in Santa Barbara County and are characterized by numerous north-south-trending peaks and valleys that range in elevation from approximately 500 feet above mean sea level to 7,581 feet above mean sea level at the highest summit. The basement rocks of the Coast Ranges include the Jurassic to Cretaceous rocks of the Franciscan Assemblage, which consist of over 55,000 feet of greywacke, greenstone, bluestone, metasedimentary rocks, and ophiolite sequences. During the Mesozoic and into the Cenozoic, the area of the present-day Coast Ranges was covered by marine waters, resulting in the thick accumulation of marine and nonmarine shale, sandstone, and conglomerate on the Franciscan basement rock. Later, these deposits were unconformably overlain by Paleocene to

Pliocene continental shelf marine sedimentary rocks. During the Late Miocene to the Late Pliocene, a mountain-building episode occurred in the vicinity of the present-day Coast Ranges, resulting in their uplift above sea level. Subsequently, from the late Pliocene to Pleistocene, extensive deposits of terrestrial material, including alluvial fans and fluvial sediments, were deposited in the Coast Ranges (Norris and Webb 1990). Tectonic deformation and sea level change related to Pleistocene climate fluctuations continued through the Quaternary Period, resulting in the formation of marine terrace platforms along the Coast Ranges.

b. Local Geologic Setting

Site Soils

The Project lays in the seismically active and geologically complex Coast Ranges Geomorphic Province. Several soil and rock types underlie the proposed bridge and are shown in the Geologic - Map, Figure 4.7-1. Geologic mapping by the USGS, field observations, and borehole data indicate majority of the site is underlain by stream channels, terraces, and alluvium overlying bedrock of the Franciscan Complex. The southern-most part of the site is underlain primarily by clays and silts (Wang, 2020).

Seismic Hazards

Northern California is a region of high seismic activity. Sonoma County generally, and the project site specifically is subject to risks associated with potentially destructive earthquakes. Earthquakes are most common along geologic faults that are planes of weakness or fractures along which rocks have been displaced. Faults are geologic hazards because of both surface fault displacement and seismic ground shaking that are distinct but related properties. Surface fault displacement results when the fault plane ruptures and that rupture surface extends to, or intersects, the ground surface. Surface fault rupture can be very destructive to structures constructed across active faults. However, the zone of damage is limited to a relatively narrow area along either side of the fault as opposed to seismic ground shaking damage that can be quite widespread. Faults are categorized as active, potentially active, and inactive. A fault is classified as active if it has moved during the Holocene time, which consists of approximately the last 11,000 years. A fault is classified as potentially active if it has experienced movement within Quaternary time, which is during the last 1.8 million years. Faults that have not moved in the last 1.8 million years are generally considered inactive.

Most faults located within Sonoma County are part of the San Andreas Fault system which extends along most of the length of California and represents the boundary between the Pacific and North American plates of the earth's crust. Figure 4.7-1 is a fault map showing locations of fault systems relative to the Project. The closest active faults to the Project are the San Andreas North Coast section (7 miles SW), the Healdsburg fault (14 miles NE), and the Rogers Creek fault zone (14 miles NE).

The faults mapped by the California Division of Mines and Geology are those that show significant surface evidence of lateral or vertical movement in the past two million years (i.e., the Quaternary geologic period) and are defined as active or are considered to be potentially active (County of Sonoma 2006). Historical earthquakes that would have produced ground motions at the site include Napa (2014, M6.1), Rogers Creek fault (1898, 6.4), San Andreas fault North Coast section (1984, M6.1), and San Francisco (1906, M7.8). The San Francisco earthquake of 1906, even though the

epicenter was about 60 miles to the south, caused cracks in the Russian Riverbank at Monte Rio 5 to 6 feet wide and 100 feet long (Lawson, 1908).

Surface Rupture

Surface rupture represents the breakage of ground along the surface trace of a fault, which is caused by the intersection of the fault surface area ruptured in an earthquake with the earth's surface. Fault displacement occurs when material on one side of a fault moves relative to the material on the other side of the fault. This can have particularly adverse consequences when structures are located within the rupture zone. It is not feasible, from a structural or economic perspective, to design and build structures that can accommodate rapid displacement involved with surface rupture. Amounts of surface displacement can range from a few inches to tens of feet during a rupture event.

Ground Shaking

The major cause of structural damage from earthquakes is ground shaking. The intensity of ground motion expected at a particular site depends upon the magnitude of the earthquake, the distance to the epicenter, and the geology of the area between the epicenter and the property. Greater movement can be expected at sites located on poorly consolidated material, such as alluvium, within close proximity to the ruptured fault, or in response to a seismic event of great magnitude. Historically, Sonoma County has been impacted by ground shaking during major earthquakes in the seismically active Northern California region, and is likely to experience ground shaking from major earthquakes in the future.

Liquefaction

Liquefaction is a seismic phenomenon in which loose, saturated granular and non-plastic fine-grained soils lose their structure/strength when subjected to high-intensity ground shaking. Liquefaction occurs when three general conditions exist: 1) shallow groundwater within the top 50 feet of the ground surface; 2) low-density non-plastic soils; and 3) high-intensity ground motion. The Project site contains soils with high or very high liquefaction levels (County of Sonoma 2006).

Landslides and Slope Stability

Seismic ground shaking can also result in landslides and other slope instability issues. Landslides occur when slopes become unstable and masses of earth material move downslope. They may take the form of a slow continuous movement such as a slump or may move very rapidly as a semi-liquid mass such as a debris flow or avalanche often triggered during periods of rainfall or by earthquakes. Mudslides and slumps are a more shallow type of slope failure. They typically affect the upper surficial soils horizons rather than bedrock features. Usually mudslides and slumps occur during or soon after periods of rainfall, but they can be triggered by seismic shaking.

Figure 4.7-1 Fault mapping

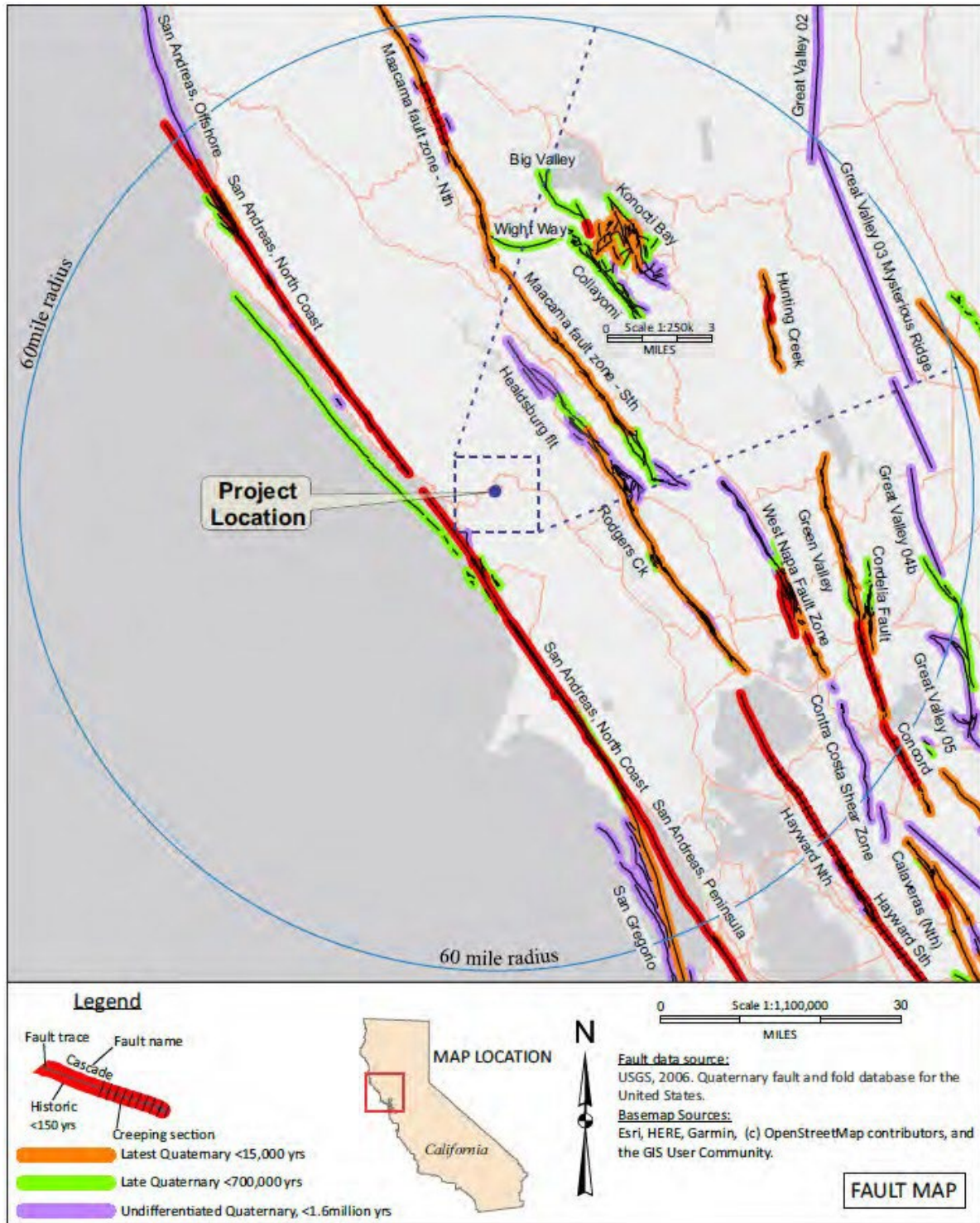
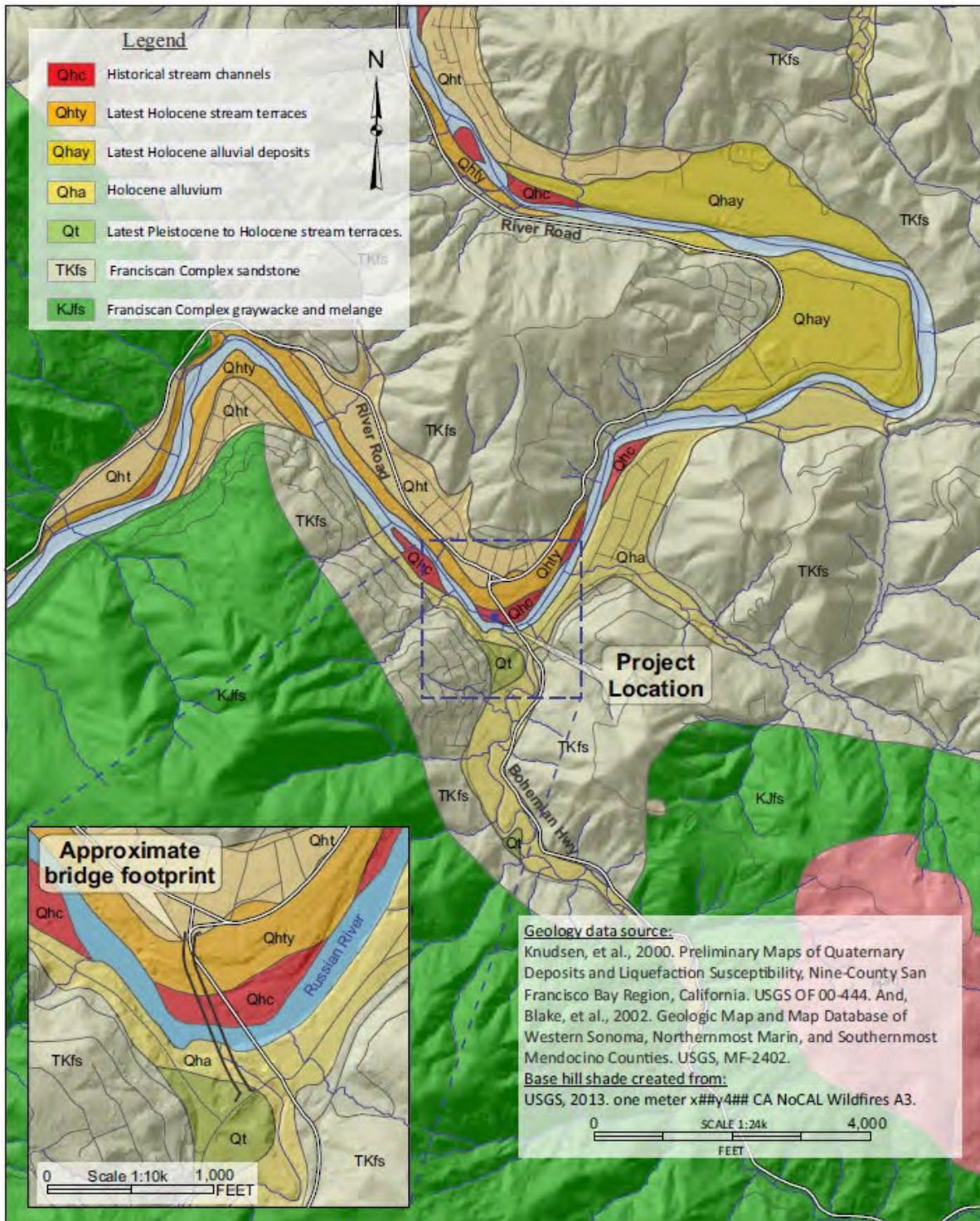


Figure 4.7-2 Site Geologic mapping



Subsidence

Subsidence refers to the sinking of a large area of ground surface in which material is displaced vertically with little or no horizontal movement. Subsidence originates at great depths below the

surface when subsurface pressure is reduced by the natural loss or human withdrawal of fluids, such as groundwater, natural gas, or oil, or can occur due to soil compression. This type of subsidence has thus far not been reported in Sonoma County (County of Sonoma 2006).

Expansive Soils

Expansive soils swell with increases in moisture content and shrink with decreases in moisture content. These soils usually contain high clay content. Foundations for structures constructed on expansive soils require special design considerations. Because expansive soils can expand when wet and shrink when dry, they can cause foundations, basement walls and floors to crack, causing substantial structural damage. As such, structural failure due to expansive soils near the ground surface is a potential hazard. These types of soils can be found throughout Sonoma County (County of Sonoma 2006).

Soil Erosion

Erosion refers to the removal of soil by water or wind. Factors that influence erosion potential include the amount of rainfall and wind, the length and steepness of the slope, and the amount and type of vegetative cover. Depending on how well protected the soil is from these forces, the erosion process can be very slow or rapid. Properties of the soil also contribute to how likely or unlikely it is to erosion. Removal of natural or man-made protection can result in substantial soil erosion and excessive sedimentation and pollution problems in streams, lakes, and estuaries. Construction activities represent the greatest potential cause of erosion. Many areas of particular erosion concern in the County are steep hillsides cultivated for wine grapes, rangelands where overgrazing may occur, and some waterways with high stream bank erosion.

c. Paleontological Resources Setting

Paleontological resources (fossils) are the remains and/or traces of prehistoric life. Fossils are typically preserved in layered sedimentary rocks and the distribution of fossils is a result of the sedimentary history of the geologic units within which they occur. Fossils occur in a non-continuous and often unpredictable distribution within some sedimentary units, and the potential for fossils to occur within sedimentary units depends on several factors. Although it is not possible to determine whether a fossil will occur in any specific location, it is possible to evaluate the potential for geologic units to contain scientifically significant paleontological resources, and therefore evaluate the potential for impacts to those resources and provide mitigation for paleontological resources if they do occur during construction.

Paleontological Resource Potential

Paleontological resource potential refers to the probability of a geologic unit to produce scientifically significant fossils. Direct impacts to paleontological resources occur when earthwork activities, such as grading or trenching, cut into the geologic deposits within which fossils are buried and physically destroy the fossils. Since fossils are the remains of prehistoric animal and plant life, they are nonrenewable. Such impacts have the potential to be significant and, under the *CEQA Guidelines*, may require mitigation. Resource potential is determined by rock type, the history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological resource potential is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey.

The discovery of a vertebrate fossil locality is of greater significance than that of an invertebrate fossil locality, especially if it contains a microvertebrate assemblage. The recognition of new vertebrate fossil locations could provide important information on the geographical range of the taxa, their radiometric age, evolutionary characteristics, depositional environment, and other important scientific research questions. Vertebrate fossils are almost always significant because they occur more rarely than invertebrates or plants. Thus, geological units having the potential to contain vertebrate fossils are considered the most sensitive.

The Society of Vertebrate Paleontology (SVP) outlines in its Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (SVP 2010) guidelines for categorizing paleontological resource potential of geologic units within a project area. The SVP (2010) describes sedimentary rock units as having a high, low, undetermined, or no potential for containing significant nonrenewable paleontological resources. This criterion is based on rock units within which vertebrates or significant invertebrate fossils have been determined by previous studies to be present or likely to be present. Significant paleontological resources are fossils or assemblages of fossils, which are unique, unusual, rare, uncommon diagnostically, stratigraphically, taxonomically, or regionally. The paleontological resource potential of the Project site has been evaluated according to the following SVP (2010) categories, which are presented below.

High Resource Potential

Rock units from which significant vertebrate or significant invertebrate fossils or significant suites of plant fossils have been recovered are considered to have a high potential for containing significant non-renewable fossiliferous resources. These units include but are not limited to, sedimentary formations and some volcanic formations which contain significant nonrenewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. Resource potential comprises both:

1. potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, or botanical and
2. importance of recovered evidence for new and significant taxonomic, phylogenetic, ecologic, or stratigraphic data. Areas which contain potentially datable organic remains older than recent, including deposits associated with nests or middens, and areas that may contain new vertebrate deposits, traces, or trackways are also classified as significant. Low Resource Potential

Sedimentary rock units that are potentially fossiliferous, but have not yielded fossils in the past or contain common and/or widespread invertebrate fossils of well documented and understood taphonomic (processes affecting an organism following death, burial, and removal from the ground), phylogenetic species (evolutionary relationships among organisms), and habitat ecology. Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low resource potential for yielding significant fossils prior to the start of construction. Generally, these units will be poorly represented by specimens in institutional collections and will not require protection or salvage operations.

Undetermined Resource Potential

Specific areas underlain by sedimentary rock units for which little information is available are considered to have undetermined paleontological resource potential. Field surveys by a qualified vertebrate paleontologist to specifically determine the potentials of the rock units are required before programs of impact mitigation for such areas may be developed.

No Resource Potential

Rock units of metamorphic or igneous origin are commonly classified as having no resource potential for containing significant paleontological resources. For geologic units with no resource potential, a paleontological monitor is not required.

4.7.2 Regulatory Setting

a. Federal Regulations

Clean Water Act

Congress enacted the Clean Water Act (CWA), formerly the Federal Water Pollution Control Act of 1972, with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and non-point source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). NPDES permitting authority is administered by the California State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCB). In Sonoma County, the Sonoma Creek and Petaluma River watersheds are in the San Francisco Bay RWQCB jurisdiction, and the remainder of the county is governed by the North Coast RWQCB (refer to Section 4.10, *Hydrology and Water Quality* for more information about watersheds in Sonoma County).

Projects within the County that disturb more than one acre would be required to obtain NPDES coverage under the California General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit). The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) describing best management practices (BMP) the discharger would use to prevent and retain storm water runoff and to prevent soil erosion.

b. State Regulations

California Building Code

The California Building Code (CBC) Title 24, Part 2 provides building codes and standards for the design and construction of structures in California. The 2016 CBC is based on the 2015 International Building Code with the addition of more extensive structural seismic provisions. Chapter 16 of the CBC contains definitions of seismic sources and the procedure used to calculate seismic forces on structures.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 was passed into law following the destructive February 9, 1971, magnitude 6.6 San Fernando earthquake. The Act provides a mechanism for reducing losses from surface fault rupture on a statewide basis. The intent of the Act is to ensure public safety by prohibiting the siting of most structures for human occupancy across traces of active faults that constitute a potential hazard to structures from surface faulting or fault creep. This Act groups faults into categories of active, potentially active, and inactive. Historic and

Holocene age faults are considered active, Late Quaternary and Quaternary age faults are considered potentially active, and pre-Quaternary age faults are considered inactive.

The Alquist-Priolo Earthquake Fault Zoning Act regulates development near the surface traces of active faults to mitigate the hazard of surface fault rupture. Essentially, this Act contains two requirements: (1) it prohibits the location of most structures for human occupancy across the trace of active faults; and (2) it establishes Earthquake Fault Zones and requires geologic/seismic studies of most proposed development within 1,000 feet of the zone. The Earthquake Fault Zones are delineated and defined by the State Geologist and identify areas where potential surface rupture along a fault could occur.

The Project is not a structure designed for human occupancy. The proposed project location is more than 1000 feet outside of the defined Alquist-Priolo Earthquake Fault Zone.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (the Act) of 1990 was passed into law following the destructive October 17, 1989, magnitude 6.9 Loma Prieta earthquake. The Act directs the CGS to delineate Seismic Hazard Zones. The purpose of the Act is to reduce the threat to public health and safety and to minimize the loss of life and property by identifying and mitigating seismic hazards, such as liquefaction, landslides, amplified ground shaking, and inundation by tsunami or seiche. Cities, counties, and State agencies are directed to use seismic hazard zone maps developed by CGS in their land-use planning and permitting processes. The Act requires that site-specific geotechnical investigations be performed prior to permitting most urban development projects within seismic hazard zones. CGS maintains these required maps.

California Public Resources Code

Section 5097.5 of the Public Resources Code states:

No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

Here “public lands” means those owned by, or under the jurisdiction of, the state or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, public agencies are required to comply with Public Resources Code Section 5097.5 for their own activities, including construction and maintenance, and for permit actions (e.g., encroachment permits) undertaken by others.

c. Local Regulations

Please refer to Section 4.10, *Hydrology and Water Quality*, for a discussion of various water quality related permits and requirements, including the Municipal Separate Storm Sewer System Permit, Standard Urban Storm Water Mitigation Plan, and Low Impact Development Manual.

Sonoma County Code

The Geologic Hazard Combining District (G District) was added to the Zoning Regulations (Chapter 26 of the Sonoma County Code) in 1993 to reduce unnecessary exposure of people and property to risks of damage or injury from earthquakes, landslides, and other geologic hazards. The G District is applied to areas located within the Alquist-Priolo Earthquake Fault Zone (County of Sonoma 2014). All uses permitted within the zoning districts with which the G District is combined are permitted, except that no structure intended for human occupancy or otherwise defined as a project in the Alquist-Priolo Earthquake Fault Zoning Act is permitted to be placed across the trace of an active fault or within 50 feet of the surface trace of any fault. A geologic report is required for development of property within the G District. The Project site is not located in a G District.

Sonoma County General Plan

The Public Safety Element of the Sonoma County General Plan (County of Sonoma 2014) includes a section regarding protection from geologic hazards, which include seismic hazards such as fault movement, ground shaking, ground failure, ground displacement along fault traces, tsunamis, secondary effects of earthquakes, landslide, and expansive soils, including:

Goal PS-1: Prevent unnecessary exposure of people and property to risks of damage or injury from earthquakes, landslides, and other geologic hazards.

Objective PS-1.1: Continue to develop and utilize use available data on geologic hazards and associated risks.

Objective PS-1.2: Regulate new development to reduce the risks of damage and injury from known geologic hazards to acceptable levels.

Objective PS-1.3: Use the Sonoma County Hazard Mitigation Plan to help reduce future damage from geologic hazards.

Policy PS-1a: Continue to use all available data on geologic hazards and related risks from the appropriate agencies.

Policy PS-1b: Continue to use studies of geologic hazards prepared during the development review process.

Policy PS-1e: Continue to implement the "Geologic Hazard Area" combining district which establishes regulations for permissible types of uses and their intensities and appropriate development standards.

Policy PS-1f: Require and review geologic reports prior to decisions on any project which would subject property or persons to significant risks from the geologic hazards areas shown on Public Safety Element hazard maps and related file maps and source documents. Geologic reports shall describe the hazards and include mitigation measures to reduce risks to acceptable levels.

Where appropriate, require an engineer's or geologist's certification that risks have been mitigated to an acceptable level and, if indicated, obtain indemnification or insurance from the engineer, geologist, or developer to minimize County exposure to liability.

Policy PS-1g: Prohibit structures intended for human occupancy (or defined as a "project" in the Alquist-Priolo Special Studies Zones Act and related Administrative Code provisions) within 50 feet of the surface trace of any fault.

Goal PS-4: Prevent unnecessary exposure of people and property to risks of damage or injury from earthquakes, landslides, and other geologic hazards.

The Open Space and Resource Conservation Element of the Sonoma County General Plan contains the following policy relating to paleontological resources that are relevant and/or applicable to the current project:

Policy OSRC-19j. Develop an archaeological and paleontological resource protection program that provides:

1. Guidelines for land uses and development on parcels identified as containing such resources
2. Standard project review procedures for protection of such resources when discovered during excavation and site disturbance
3. Educational materials for the building industry and the general public on the identification and protection of such resources

Sonoma County Hazard Mitigation Plan

The Sonoma County Hazard Mitigation Plan, updated April 2017, assesses the County's vulnerabilities to various hazards and presents mitigation strategy, including goals, objectives, and actions that the County will strive to implement over the next five years. These hazards include earthquakes and landslides. The hazard mitigation plan seeks to identify opportunities for reasonable mitigation actions and sets out a five-year implementation plan. For example, some identified actions to reduce seismic hazards includes County building evaluation and retrofits, implementation of the earthquake resistant bracing system program, and retrofit of bridges throughout the County.

4.7.3 Impact Analysis

a. Methodology and Thresholds of Significance

The following thresholds are based on *CEQA Guidelines* Appendix G. For purposes of this EIR, impacts related to geology and soils are considered significant if implementation of the proposed project would:

1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault
 - b. Strong seismic ground shaking
 - c. Seismic-related ground failure, including liquefaction
 - d. Landslides
2. Result in substantial soil erosion or the loss of topsoil
3. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse
4. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirectly risks to life or property
5. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater

6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature

To determine the uniqueness of a given paleontological resource, it must first be identified or recovered (i.e., salvaged). CEQA does not define “a unique paleontological resource or site.” However, SVP has defined a “significant paleontological resource” in the context of environmental review as follows:

Fossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are typically older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years) (SVP 2010).

For the purposes of this report, any activity that may destroy scientifically significant paleontological resources as defined above would be a significant impact.

b. Project Impacts and Mitigation Measures

| |
|---|
| Threshold: Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? |
|---|

Impact GEO-1 THE PROJECT SITE IS NOT LOCATED IN AN ALQUIST-PRIOLO EARTHQUAKE FAULT ZONE, AND THEREFORE THE PROJECT WOULD NOT DIRECTLY OR INDIRECTLY CAUSE SUBSTANTIAL ADVERSE EFFECTS INVOLVING RUPTURE OF A KNOWN EARTHQUAKE FAULT. **NO IMPACT.**

As discussed above in Section 4.7.1, *Setting*, Sonoma County applies the G District to sites located within an Alquist-Priolo Earthquake Fault Zone. The Project site is not within the G District. Therefore, the Project would not directly or indirectly cause substantial adverse effects involving rupture of a known earthquake fault.

Mitigation Measures

No mitigation measures are required.

Significance After Mitigation

No impact would occur and mitigation is not required.

| |
|--|
| <p>Threshold: Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides; or, be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?</p> |
|--|

Impact GEO-2 THE PROJECT COULD RESULT IN EXPOSURE OF PEOPLE OR STRUCTURES TO A RISK OF LOSS, INJURY, OR DEATH FROM SEISMIC EVENTS. THE PROJECT COULD BE LOCATED ON A GEOLOGIC UNIT OR SOIL THAT IS UNSTABLE OR COULD BECOME UNSTABLE RESULTING IN ON OR OFF-SITE LANDSLIDE, LATERAL SPREADING, SUBSIDENCE, LIQUEFACTION OR COLLAPSE. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT WITH COMPLIANCE WITH APPLICABLE LAWS AND REGULATIONS.

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

Structures that would be built on steep slopes could be exposed to an existing risk of landslide or if improperly constructed could exacerbate existing landslide conditions which are located in areas vulnerable to liquefaction and/or landslide hazard. New structures could also experience substantial damage during seismic ground shaking events, including development on the Potential Sites listed in Section 4.7.1, *Liquefaction* subsection. The Project would replace a bridge subject to seismic damage with newer structure built to current seismic standards that could better withstand the adverse effects of strong ground shaking. Potential structural damage and the exposure of people to the risk of injury or death from structural failure would be minimized by compliance with CBC engineering design and construction measures. Foundations and other structural support features are designed to resist or absorb damaging forces from strong ground shaking and liquefaction.

According to the “Liquefaction Susceptibility Map” (Knudsen, et al., 2000, USGS OF 00-444), liquefaction potential exists at the site. The area adjacent to where the river turns, below the north approach the “beach sand”, is considered to have high liquefaction potential. Based on the boring data (Borings B-2 and B-3), this appears to be at relatively shallow depths. The deposits quickly grade to medium dense to dense with gravels by about Elev. 0. The impact of liquefaction on project design is low.

In addition to compliance with mandatory CBC requirements, implementation of General Plan goals and policies would further reduce the potential for loss, injury, or death following a seismic event. General Plan goals and policies, including Policies PS-1a and 1b would help to avoid development prone to seismic hazards. Implementation of these goals and policies, in addition to compliance with applicable laws and regulations, would minimize the potential for loss, injury, or death following a seismic event and would reduce this potential impact to a less-than-significant level.

Implementation of the Project would minimize the potential for loss, injury, or death following a seismic event and be a substantial improvement compared to the existing structure, therefore impact is a less-than-significant level.

Mitigation Measures

No mitigation measures are required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

| |
|--|
| Threshold: Would the project result in substantial soil erosion or the loss of topsoil? |
|--|

Impact GEO-3 THE PROJECT WOULD INCLUDE GROUND DISTURBANCE SUCH AS EXCAVATION AND GRADING THAT WOULD RESULT IN LOOSE OR EXPOSED SOIL. THIS DISTURBED SOIL COULD BE ERODED BY WIND OR DURING A STORM EVENT, WHICH WOULD RESULT IN THE LOSS OF TOPSOIL. ADHERENCE TO PERMIT REQUIREMENTS AND COUNTY REGULATIONS WOULD ENSURE THIS IMPACT IS LESS THAN SIGNIFICANT.

The project would involve construction activities such as stockpiling, grading, excavation, paving, and other earth-disturbing activities. Loose and disturbed soils are more prone to erosion and loss of topsoil by wind and water.

Construction activities that disturb one or more acres of land surface are subject to NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2012-0006-DWQ) adopted by the SWRCB. Compliance with the permit requires each qualifying development project to file a Notice of Intent with the SWRCB. Permit conditions require preparation of a SWPPP, which must describe the site, the facility, erosion and sediment controls, runoff water quality monitoring, means of waste disposal, implementation of approved local plans, control of construction sediment and erosion control measures, maintenance responsibilities, and non-storm water management controls. As described in Section 4.10, *Hydrology and Water Quality*, Potential Sites would be subject to the applicable NPDES Municipal Separate Storm Sewer System Permit (based on site location) and Sonoma County Code Chapters 11 and 11A, which require measures to reduce and eliminate stormwater pollutants, installation of appropriate BMPs to control stormwater runoff from construction sites, maintain or reduce stormwater runoff volumes and rates, and that grading and drainage permits be obtained prior to construction. The County also requires development to comply with the Low Impact Development Manual, which satisfies Order R1-2015-0030, NPDES Permit CA0025054 through the requirement of various low impact development measures. Inspection of construction sites before and after storms is also required to identify storm water discharge from the construction activity and to identify and implement erosion controls, where necessary. Enforcement of these permit requirements would reduce soil erosion impacts.

Additionally, Sonoma County's requirements for erosion prevention and sediment control would apply to development facilitated by the project. These include erosion prevention and sediment control in accordance with Chapter 11 and 11a of the Sonoma County Code, conformance of plans to erosion prevention and sediment control BMPs, requirements for effective erosion prevention and sediment control on all disturbed areas during the rainy season (October 1 – April 30), and prohibition of grading and drainage improvement construction during the rainy season except when on-site soil conditions permit work to be performed in compliance with the Sonoma County Code. Adherence to the requirements of the Sonoma County BMPs would reduce the potential for

development facilitated by the project to cause erosion or the loss of topsoil by ensuring proper management of loose and disturbed soil.

Mitigation Measures

No mitigation measures are required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold: Would the project be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Impact GEO-4 THE PROJECT MAY RESULT IN THE CONSTRUCTION OF STRUCTURES ON EXPANSIVE SOILS, WHICH COULD CREATE A SUBSTANTIAL RISK TO LIFE OR PROPERTY. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT WITH COMPLIANCE WITH THE REQUIREMENTS OF THE CALIFORNIA BUILDING CODE.

Development facilitated by the project that is constructed on expansive soils could be subject to damage or could become unstable when the underlying soil shrinks or swells. The adverse effects of expansive soils can be avoided through proper subsoil preparation, drainage, and foundation design. In order to design an adequate foundation, it must be determined if the site contains expansive soils through appropriate soil sampling and laboratory soils testing. Expansive soils are identified through expansion tests of samples of soil or rock, or by means of the interpretation of Atterberg limit tests, a standard soils testing procedure. The CBC includes requirements to address soil-related hazards, including testing to identify expansive soils and design specifications where structure are to be constructed on expansive soils. Typical measures to treat expansive soil conditions involve removal, proper fill selection, and compaction. In cases where soil remediation is not feasible, the CBC requires structural reinforcement of foundations to resist the forces of expansive soils. Compliance with the requirements of the CBC, as well as relevant General Plan policies (including Policies PS-1a and 1b), would reduce impacts related to expansive soils to a less-than-significant level.

Mitigation Measures

No mitigation measures are required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold: Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Impact GEO-5 THE PROJECT WOULD NOT INCLUDE THE INSTALLATION OF SEPTIC TANKS OR ALTERNATIVE WASTEWATER DISPOSAL SYSTEMS ON SOILS INCAPABLE OF SUPPORTING SUCH SYSTEMS. **NO IMPACTS WOULD OCCUR.**

As described in Section 4.18, *Utilities and Service Systems*, development facilitated by the project would occur within designated Urban Service Areas, where existing wastewater infrastructure exists at most of the Potential Sites. Sites not located adjacent to wastewater infrastructure would require the construction of expanded wastewater facilities and infrastructure to serve future development (refer to Section 4.18, *Utilities and Service Systems*), as intended by the Urban Service Area designation. Therefore, the proposed project would not require the use of septic tanks or alternative wastewater disposal systems. Therefore, no impacts would occur.

Mitigation Measures

No mitigation measures are required.

Significance After Mitigation

No impact would occur and mitigation is not required.

Threshold: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Impact GEO-6 THE PROJECT MAY DIRECTLY OR INDIRECTLY DESTROY A UNIQUE PALEONTOLOGICAL RESOURCE OR SITE OR UNIQUE GEOLOGIC FEATURE DURING GROUND-DISTURBING ACTIVITIES. **IMPACTS COULD BE POTENTIALLY SIGNIFICANT AND MITIGATION IS REQUIRED.**

Based on a paleontological literature review and existing fossil locality information available on the Paleobiology Database and University of California Museum of Paleontology database, the paleontological resource potential of the geologic units underlying the Project site was determined in accordance with criteria set forth by the SVP (2010). Table 4.7-1 list the geologic units present.

Unique paleontological resources may be encountered during ground-disturbing activities associated with development (e.g., grading, excavation, or other ground-disturbing construction activity) in areas assigned a high paleontological resource potential and have intact native sediments. Ground-disturbing activities has the potential to result in the destruction, damage, or loss of undiscovered scientifically significant paleontological resources. Identified units with a high paleontological resource potential that experience ground disturbance at or near the surface could result in significant impacts to unique paleontological resources. Ground areas determined to have been previously disturbed, generally have a low potential for paleontological resources.

Unique paleontological resources may be encountered during ground-disturbing activities at shallow or unknown depths in areas mapped as having low paleontological resource potential at the surface. Early Holocene to late Pleistocene alluvial and marine terrace deposits (Qt) that may be present at shallow or unknown depths in areas mapped as middle to late Holocene deposits (Q, Qal) have a high paleontological resource potential, and ground disturbance has potential to result in significant impacts to unique paleontological resources.

Table 4.7-1 Potential Site Areas Subject to Mitigation

| Sensitive Geologic Unit(s) | Recommended Monitoring |
|--|--|
| Quaternary old alluvial and marine terrace deposits (Qt) | All excavations within native (intact) sediments |
| Coastal Belt/ Franciscan Complex Sandstone (Tkfs) | None |
| Quaternary young alluvium, (Qal,) | None |
| Quaternary Holocene alluvium (Qhty, Qha) | None |
| River | None |
| Artificial fill (Af) | None |

Paleontological resources have the potential to be present at the Project site. Ground-disturbing activities (i.e., grading, trenching, foundation work) may occur in previously undisturbed (i.e., intact) sediments. Impacts to paleontological resources, if fossils are damaged or destroyed, would be significant, therefore mitigation measures would be required.

Mitigation Measures

Mitigation Measures GEO-1 through GEO-6, as applicable, shall be implemented for ground disturbing activities within the Project site underlain by geologic units with high paleontological resource potential and are determined to be within intact native sediments. Implementation of Mitigation Measures GEO-1 through GEO-6 would not be required for Potential Sites underlain by geologic units with low paleontological resource potential (i.e., Quaternary young alluvium [Q, Qal, Qhty, Qhc, River, and Qha] or no paleontological potential (i.e., Franciscan Complex Sandstone [Tkfs]). Mitigation Measures GEO-1 through GEO-6 would not be required in areas determined to have been previously disturbed.

GEO-1 Paleontological Review of Project Plans

For projects with proposed ground-disturbing activity, the project applicant shall retain a Qualified Professional Paleontologist to review proposed ground disturbance associated with development to:

1. Assess if the project will require paleontological monitoring;
2. If monitoring is required, to develop a project-specific Paleontological Resource Mitigation and Monitoring Program (PRMMP) as outlined in Mitigation Measure GEO-2;
3. Draft the Paleontological Worker Environmental Awareness Program as outlined in Mitigation Measure GEO-3; and

4. Define within a project specific PRMMP under what specific ground disturbing activity paleontological monitoring will be required and the procedures for collection and curation of recovered fossils, as described in Mitigation Measures GEO-4, GEO-5, and GEO-6.

The Qualified Paleontologist shall base the assessment of monitoring requirements on the location and depth of ground disturbing activity in the context of the paleontological potential and potential impacts outlined in this section. A qualified professional paleontologist is defined by the SVP standards as an individual preferably with an M.S. or Ph.D. in paleontology or geology who is experienced with paleontological procedures and techniques, who is knowledgeable in the geology of California, and who has worked as a paleontological mitigation project supervisor for a least two years (SVP 2010). The County shall review and approve the assessment before grading permits are issued.

GEO-2 Paleontological Resources Mitigation and Monitoring Program

For those projects deemed to require a PRMMP under Mitigation Measure GEO-1 above, the Qualified Paleontologist shall prepare a PRMMP for submission to the County prior to the issuance of grading permits. The PRMMP shall include a pre-construction paleontological site assessment and develop procedures and protocol for paleontological monitoring and recordation. Monitoring shall be conducted by a qualified paleontological monitor who meets the minimum qualifications per standards set forth by the SVP.

The PRMMP procedures and protocols for paleontological monitoring and recordation shall include:

1. Location and type of ground disturbance requiring paleontological monitoring.
2. Timing and duration of paleontological monitoring.
3. Procedures for work stoppage and fossil collection.
4. The type and extent of data that should be collected with recovered fossils.
5. Identify an appropriate curatorial institution.
6. Identify the minimum qualifications for qualified paleontologists and paleontological monitors.
7. Identify the conditions under which modifications to the monitoring schedule can be implemented.
8. Details to be included in the final monitoring report.

Prior to starting construction, copies of the PRMMP shall be submitted to the County for review and approval as to adequacy.

GEO-3 Paleontological Worker Environmental Awareness Program (WEAP)

Prior to any ground disturbance within Potential Sites underlain by geologic units with high paleontological resource potential, the applicant shall incorporate information on paleontological resources into the Project's Worker Environmental Awareness Training (WEAP) materials, or a stand-alone Paleontological Resources WEAP shall be submitted to the County for review and approval. The Qualified Paleontologist or his or her designee shall conduct training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff. The Paleontological WEAP training shall be fulfilled simultaneously with the overall WEAP training, or at the first preconstruction meeting at which a Qualified Paleontologist attends prior to ground disturbance. Printed literature (handouts) shall accompany the initial training. Following the initial WEAP training, all new workers and

contractors must be trained prior to conducting ground disturbance work. A sign-in sheet for workers who have completed the training shall be submitted to the County upon completion of WEAP administration.

GEO-4 Paleontological Monitoring

Paleontological monitoring shall only be required for those ground-disturbing activities identified under Mitigation Measure GEO-1, where construction activities (i.e., grading, trenching, foundation work) are proposed in previously undisturbed (i.e., intact) sediments with high paleontological sensitivities. Monitoring shall be conducted by a qualified professional paleontologist (as defined above) or by a qualified paleontological monitor (as defined below) under the supervision of the qualified professional paleontologist. Monitoring may be discontinued on the recommendation of the qualified professional paleontologist if they determine that sediments are likely too young, or conditions are such that fossil preservation would have been unlikely, or that fossils present have little potential scientific value.

The following outlines minimum monitor qualifications and procedures for fossil discovery and treatment:

1. **Monitoring.** Paleontological monitoring shall be conducted by a qualified paleontological monitor, who is defined as an individual who has experience with collection and salvage of paleontological resources and meets the minimum standards of the SVP (2010) for a Paleontological Resources Monitor. The Qualified Paleontologist will determine the duration and timing of the monitoring based on the location and extent of proposed ground disturbance. If the Qualified Paleontologist determines that full-time monitoring is no longer warranted, based on the specific geologic conditions at the surface or at depth, they may recommend that monitoring be reduced to periodic spot-checking or cease entirely. Refer to Table 4.7-1 for a paleontological resource potential summary and recommendations for the Project Sites.
2. **Fossil Discoveries.** In the event of a fossil discovery by the paleontological monitor or construction personnel, all work in the immediate vicinity of the find shall cease. A Qualified Paleontologist shall evaluate the find before restarting construction activity in the area. If the Qualified Paleontologist determines that the fossil(s) is (are) scientifically significant; including identifiable specimens of vertebrate fossils, uncommon invertebrate, plant, and trace fossils; the Qualified Paleontologist (or paleontological monitor) shall recover them following standard field procedures for collecting paleontological as outlined in the PRMMP prepared for the project.
3. **Salvage of Fossils.** Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. In this case the Qualified Paleontologist shall have the authority to temporarily direct, divert or halt construction activity to ensure that the fossil(s) can be removed in a safe and timely manner. If fossils are discovered, the Qualified Paleontologist (or Paleontological Monitor) shall recover them as specified in the project's PRMMP.

GEO-5 Preparation and Curation of Recovered Fossils

Once salvaged, significant fossils shall be identified to the lowest possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection (such as the University of California Museum of Paleontology), along with

all pertinent field notes, photos, data, and maps. Fossils of undetermined significance at the time of collection may also warrant curation at the discretion of the Qualified Paleontologist.

GEO-6 Final Paleontological Mitigation Report

Upon completion of ground disturbing activity (and curation of fossils if necessary) the Qualified Paleontologist shall prepare a final mitigation and monitoring report outlining the results of the mitigation and monitoring program. The report should include discussion of the location, duration and methods of the monitoring, stratigraphic sections, any recovered fossils, and the scientific significance of those fossils, and where fossils were curated. The report shall be submitted to the County prior to occupancy permits. If the monitoring efforts produced fossils, then a copy of the report shall also be submitted to the designated museum repository.

Significance After Mitigation

With implementation of Mitigation Measures GEO-1 through GEO-6, impacts to paleontological resources by the project would be reduced or avoided and impacts would be less than significant after mitigation.

Mitigation Measures GEO-1 through GEO-6 do not apply to areas which is underlain by geologic units with low or no paleontological potential. These measures also do not apply to any proposed ground-disturbing work within previously disturbed sediments.

4.7.4 Cumulative Impacts

A project's environmental impacts are "cumulatively considerable" if the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (*CEQA Guidelines* Section 15065[a][3]). The geographic scope for cumulative geology and soils impacts is limited to the Project vicinity. This geographic scope is appropriate for geology and soils because geology and soils impacts, such as erosion and loss of topsoil, can affect adjacent sites but do not impact regional areas as a whole.

Cumulative development would gradually increase population and therefore gradually increase the number of people exposed to potential geological hazards, including effects associated with seismic events such as seismic shaking, liquefaction, and landslides. The proposed replacement of an existing bridge is not expected to promote development beyond the existing site condition.

Cumulative impacts would be less than significant, and the proposed project would not make a cumulatively considerable contribution to a significant cumulative impact related to seismic hazards.

Cumulative projects would also increase the potential for impacts to paleontological resources through construction activities in the area. As described in Impact GEO-6, the Project Site is underlain by geologic units with high paleontological resource potential, and the project could result in a cumulatively considerable contribution to a significant cumulative impact in the absence of mitigation. Mitigation Measures GEO-1 through GEO-6 would reduce impacts of the project on paleontological resources to a less than significant level, and it is assumed similar measures would be taken for cumulative development projects. Therefore, although cumulative projects could result in significant cumulative impacts to paleontological resources, project-specific mitigation for cumulative development would limit this impact to less than significant, and implementation of Mitigation Measures GEO-1 through GEO-6 would ensure the project would not have a cumulatively considerable contribution to a significant cumulative impact related to paleontological resources.

This page intentionally left blank.

Greenhouse Gas Emissions Table of Contents

| | | |
|-------|--------------------------------|--------|
| 4.8 | Greenhouse Gas Emissions | 4.8-1 |
| 4.8.1 | Setting..... | 4.8-1 |
| 4.8.2 | Regulatory Setting | 4.8-6 |
| 4.8.3 | Impact Analysis | 4.8-11 |
| 4.8.4 | Cumulative Impacts | 4.8-15 |

Tables

| | | |
|-------------|--|--------|
| Table 4.8-1 | Estimated Construction GHG Emissions | 4.8-14 |
|-------------|--|--------|

4.8 Greenhouse Gas Emissions

This section describes the environmental and regulatory setting for greenhouse gases (GHG) and climate change. It also describes the potential for the project to generate greenhouse gas (GHG) emissions in excess of standards or to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. The analysis in this section is based in part on modeling using the California Emissions Estimator Model (CalEEMod). Impacts related to air quality are described in Section 4.2, *Air Quality*.

4.8.1 Setting

The unique chemical properties of GHGs enable them to become well-mixed in the atmosphere and transported over long distances. Consequently, unlike other resource areas that are primarily concerned with localized project impacts, the global nature of climate change requires a broader analysis approach. The following subsections provide background information on global climate change and principal GHGs associated with implementation of the Project. Potential impacts of climate change on the study area are also identified.

a. Climate Change and Greenhouse Gases

Climate change is the observed increase in the average temperature of Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period. The term "climate change" is often used interchangeably with the term "global warming," but "climate change" is preferred to "global warming" because it helps convey other changes in addition to rising temperatures. The baseline against which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. The global climate changes continuously, as evidenced by repeated episodes of substantial warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed substantial acceleration in the rate of warming during the past 150 years (Intergovernmental Panel on Climate Change [IPCC] 2014). The understanding of anthropogenic warming and cooling influences on climate has led to a high confidence (95 percent or greater chance) that the global average net effect of human activities has been the dominant cause of warming since the mid-twentieth century (IPCC 2014).

Gases that absorb and re-emit infrared radiation in the atmosphere are called GHGs. The gases widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO₂), methane (CH₄), nitrous oxides (N₂O), fluorinated gases such as hydrofluorocarbons and perfluorocarbons, and sulfur hexafluoride (SF₆). Water vapor is excluded from the list of GHGs because it only stays in the atmosphere for a short time and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

Both natural processes and human activities emit GHGs. CO₂ and CH₄ are emitted in the greatest quantities from human activities. CO₂ emissions are largely by-products of fossil fuel combustion, whereas CH₄ results from off-gassing associated with agricultural practices and landfills. Observations of CO₂ concentrations, globally averaged temperature, and sea level rise are generally well within the range of the extent of the earlier IPCC projections. Recently observed increases in

CH₄ and N₂O concentrations are smaller than those assumed in the scenarios in the previous assessments. Each IPCC assessment used new projections of future climate change that have become more detailed as the models have become more advanced.

Manmade GHGs include fluorinated gases, such as SF₆ many of which have greater heat-absorption potential than CO₂. Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally 100 years). Because GHG absorb different amounts of heat, a common reference gas (CO₂) is used to relate the amount of heat absorbed to the amount of the gas emissions, referred to as “carbon dioxide equivalent” (CO₂e), and is the amount of a GHG emitted multiplied by its GWP. CO₂ has a 100-year GWP of one. By contrast, CH₄ has a GWP of 25, meaning its global warming effect is 25 times greater than CO₂ on a molecule per molecule basis (IPCC 2007).

The accumulation of GHGs in the atmosphere regulates the earth’s temperature. Without the natural heat trapping effect of GHGs, Earth’s surface would be about 93 degrees Fahrenheit (°F) cooler (California Environmental Protection Agency 2006). However, emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

Greenhouse Gas Inventory

Global

Worldwide anthropogenic emissions of GHG were approximately 46,000 million metric tons (MMT or gigatonne) of CO₂e in 2010 (IPCC 2014). CO₂ emissions from fossil fuel combustion and industrial processes contributed about 65 percent of total emissions in 2010. Of anthropogenic GHGs, CO₂ was the most abundant accounting for 76 percent of total 2010 emissions. CH₄ emissions accounted for 16 percent of the 2010 total, while N₂O and fluorinated gases account for six and two percent, respectively (IPCC 2014).

Federal

Total United States GHG emissions were 6,456.7 MMT of CO₂e in 2017 (United States Environmental Protection Agency [USEPA] 2019). Since 1990, total United States emissions have increased by an average annual rate of 0.04 percent, for a total increase of 1.3 percent since 1990. However, emissions decreased by 0.5 percent from 2016 to 2017. The decrease from 2016 to 2017 was a result of multiple factors, including (1) a continued shift from coal to natural gas and other non-fossil fuel energy sources in the electric power sector and (2) milder weather in 2017 resulting in overall decreased electricity usage. In 2017, the industrial and transportation end-use sectors accounted for 30 percent and 29 percent, respectively, of GHG emissions while the residential and commercial end-use sectors accounted for 15 percent and 16 percent of GHG emissions, respectively, with electricity emissions distributed among the various sectors.

California

Based on the California Air Resource Board’s (CARB) California GHG Inventory for 2000-2017, California produced 424.1 MMT of CO₂e in 2017. Transportation is the major source of GHG emissions in California, contributing 41 percent of the state’s total GHG emissions. The industrial sector is the second largest source, contributing 24 percent of the state’s GHG emissions, and electric power accounts for approximately 15 percent (CARB 2019). California emissions are due in

part to its large size and large population compared to other states. In 2016, the State of California achieved its 2020 GHG emission reduction targets as emissions fell below 431 MMT of CO₂e (CARB 2019).

Sonoma County

In July 2020, the Regional Climate Protection Authority (RCPA) updated the Sonoma County GHG inventory for the year 2018 emissions (RCPA 2020). The RCPA established a baseline communitywide GHG inventory for calendar year 2010 and 1990 as part of the Climate Action 2020 and Beyond development process. The RCPA completed a 2018 inventory update to help track progress towards achieving the short and long-term emissions reduction goals established in Climate Action 2020 and Beyond. Unincorporated Sonoma County emissions in 2018 were 0.858 MMT CO₂e, slightly above 2015 emissions of 0.850 MMT CO₂e. Relative to 1990 emissions, 2018 emissions decreased by 20 percent. For Sonoma County as a whole, on-road transportation was the largest GHG emissions sector, followed by building energy use, and livestock and fertilizer.

Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the twenty-first century than were observed during the twentieth century. Long-term trends have found that each of the past three decades has been warmer than all the previous decades in the instrumental record, and the decade from 2000 through 2010 has been the warmest. The observed global mean surface temperature for the decade from 2006 to 2015 was approximately 0.87 degrees Celsius (°C; 0.75°C to 0.99°C) higher than the global mean surface temperature over the period from 1850 to 1900. Furthermore, several independently analyzed data records of global and regional Land-Surface Air Temperature obtained from station observations agree that Land-Surface Air Temperature as well as sea surface temperatures have increased. Due to past and current activities, anthropogenic GHG emissions are increasing global mean surface temperature at a rate of 0.2°C per decade. In addition to these findings, there are identifiable signs that global warming is currently taking place, including substantial ice loss in the Arctic over the past two decades (IPCC 2014, 2018).

According to *California's Fourth Climate Change Assessment*, statewide temperatures from 1986 to 2016 were approximately 1°F to 2°F higher than those recorded from 1901 to 1960. Potential impacts of climate change in California may include loss in water supply from snowpack, sea level rise, more extreme heat days per year, more large forest fires, and more drought years (State of California 2019). While there is scientific consensus about the possible effects of climate change at a global and statewide level, current scientific modeling tools are unable to predict what local impacts may occur with a similar degree of accuracy. In addition to statewide projections, *California's Fourth Climate Change Assessment* includes regional reports that summarize climate impacts and adaptation solutions for nine regions of the state as well as regionally-specific climate change case studies, including for the greater San Francisco Bay Area region that includes Sonoma County where the project is located (State of California 2018). Below is a summary of some of the potential effects that could be experienced in California and the San Francisco Bay Area region because of climate change.

Air Quality

Higher temperatures are conducive to air pollution formation and could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. As temperatures have increased in recent years, the area burned by wildfires has increased, and wildfires have been occurring at higher elevations in the Sierra Nevada Mountains (State of California 2019). If higher temperatures continue to be accompanied by an increase in the incidence and extent of large wildfires, air quality would worsen. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thereby ameliorating the pollution associated with wildfires. Severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks (California Natural Resources Agency 2009).

In the San Francisco Bay Area region, changes in meteorological conditions under climate change will affect future air quality. Hotter future temperatures will act to increase surface ozone concentrations (State of California 2018). Increased wildfires from higher temperatures and more extreme droughts will lead to further air quality degradation during such fires.

Water Supply

Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of natural and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future precipitation trends and water supplies in California. For example, many southern California cities have experienced their lowest recorded annual precipitation twice within the past decade; however, in a span of only two years, Los Angeles experienced both its driest and wettest years on record (California Department of Water Resources 2008). This uncertainty regarding future precipitation trends complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. However, the average early spring snowpack in the western United States, including the Sierra Nevada Mountains, decreased by about 10 percent during the last century. During the same period, sea level rose over 5.9 inches along the central and southern California coast (State of California 2019). The Sierra snowpack provides most of California's water supply by accumulating snow during wet winters and releasing it slowly during dry springs and summers. A warmer climate is predicted to reduce the fraction of precipitation falling as snow and result in less snowfall at lower elevations, thereby reducing the total snowpack (California Department of Water Resources 2008; State of California 2019). The State of California projects that average spring snowpack in the Sierra Nevada and other mountain catchments in central and northern California will decline by approximately 66 percent from the historical average by 2050 (State of California 2019).

Like the rest of the State, the San Francisco Bay Area is expected to face a challenging combination of decreased water supply and increased water demand (State of California 2018). Melting snowpack, increasing seawater intrusion into groundwater, increasing rates of evapotranspiration, and levee failures or subsidence that contaminate Delta supplies will affect both the quantity of water available and the quality of supplies. Future increases in temperature, regardless of whether total precipitation goes up or down, will likely cause longer and deeper droughts, posing major problems for water supplies, natural ecosystems, and agriculture.

Hydrology and Sea Level Rise

As discussed above, climate change could potentially affect the amount of snowfall, rainfall, and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for salt water intrusion. Climate change has the potential to induce substantial sea level rise in the coming century (State of California 2019). The rising sea level increases the likelihood and risk of flooding. The rate of increase of global mean sea levels over the 2001-2010 decade, as observed by satellites, ocean buoys and land gauges, was approximately 3.2 millimeters per year, which is double the observed twentieth century trend of 1.6 millimeters per year (World Meteorological Organization [WMO] 2013). As a result, global mean sea levels averaged over the last decade were about 8 inches higher than those of 1880 (WMO 2013). Sea levels are rising faster now than in the previous two millennia, and this rise is expected to accelerate, even with robust GHG emission control measures. The most recent IPCC report predicts a mean sea level rise of 10 to 37 inches by 2100 (IPCC 2018). A rise in sea levels could erode 31 to 67 percent of southern California beaches, flooding approximately 370 miles of coastal highways during 100-year storm events, jeopardizing California's water supply due to salt water intrusion, and inducing groundwater flooding and/or exposure of buried infrastructure (State of California 2019). Increased CO₂ emissions can cause oceans to acidify due to the carbonic acid it forms. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

In the San Francisco Bay Area, much of the transportation system — airports, roads, and railways — is concentrated along the bay where flooding from sea level rise and storm surge is a major vulnerability (State of California 2018). The effects of climate change will further exacerbate impacts from sea level rise and storm surge in the region.

Agriculture

California has a \$50 billion annual agricultural industry that produces over a third of the country's vegetables and two-thirds of the country's fruits and nuts (California Department of Food and Agriculture 2018). Higher CO₂ levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, certain regions of agricultural production could experience water shortages of up to 16 percent; water demand could increase as hotter conditions lead to the loss of soil moisture; crop-yield could be threatened by water-induced stress and extreme heat waves; and plants may be susceptible to new and changing pest and disease outbreaks (State of California 2019). Temperature increases could change the time of year certain crops, such as wine grapes, bloom or ripen, thereby affecting their quality (California Climate Change Center 2006).

In the San Francisco Bay Area region more frequent droughts and extreme temperatures could affect wine production, where 70 percent of California's grapes are grown (State of California 2018). This and other climate effects can contribute to higher food prices and shortages.

Ecosystems and Wildlife

Climate change and potential resulting changes in weather patterns could have ecological effects on a global and local scale. Increasing concentrations of GHGs are likely to accelerate the rate of climate change. Scientists project that the annual average maximum daily temperatures in California could rise by 4.4 to 5.8°F in the next 50 years and by 5.6 to 8.8°F in the next century (State of California 2019). Soil moisture is likely to decline in many regions, and intense rainstorms are likely

to become more frequent. Rising temperatures could have four major impacts on plants and animals related to (1) timing of ecological events; (2) geographic distribution and range; (3) species' composition and the incidence of nonnative species within communities; and (4) ecosystem processes, such as carbon cycling and storage (Parmesan 2006; State of California 2019).

Many of the impacts identified above would impact ecosystems and wildlife in the San Francisco Bay Area region. Increases in wildfire would further remove sensitive habitat; increased severity in droughts would potentially starve plants and animals of water; and sea level rise will affect sensitive coastal ecosystems, especially wetlands.

4.8.2 Regulatory Setting

a. Federal Regulations

Federal GHG Emissions Regulation

The U.S. Supreme Court in *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 497) held that the USEPA has the authority to regulate motor-vehicle GHG emissions under the federal Clean Air Act. The USEPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines and requires annual reporting of emissions. In 2012, the USEPA issued a Final Rule that establishes the GHG permitting thresholds that determine when Clean Air Act permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities.

In 2014, the U.S. Supreme Court in *Utility Air Regulatory Group v. EPA* (134 S. Ct. 2427 [2014]) held that USEPA may not treat GHGs as an air pollutant for purposes of determining whether a source is a major source required to obtain a PSD or Title V permit. The Court also held that PSD permits that are otherwise required (based on emissions of other pollutants) may continue to require limitations on GHG emissions based on the application of best available control technology.

Safer Affordable Fuel-Efficient Vehicle Rule

On September 27, 2019, the USEPA and the National Highway Safety Administration published the "Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program." The Part One Rule revokes California's authority to set its own GHG emissions standards and set zero-emission vehicle mandates in California. To account for the effects of the Part One Rule, CARB released off-model adjustment factors on November 20, 2019, to adjust criteria air pollutant emissions outputs from the EMFAC model. The Final SAFE Rule (i.e., Part Two) then relaxed federal GHG emissions and Corporate Average Fuel Economy standards to increase in stringency at only about 1.5 percent per year from model year 2020 levels over model years 2021-2026 (CARB 2020a). The previously established emission standards and related fuel economy standards would have achieved about four percent per year improvements through model year 2025. Therefore, CARB has prepared off-model CO₂ emissions adjustment factors for both the EMFAC2014 and EMFAC2017 models to account for the impact of the SAFE Vehicles Rule (CARB 2020b). With the incorporation of these adjustment factors, operational emission factors for CO₂ generated by light-duty automobiles, light-duty trucks, and medium-duty trucks associated with project-related vehicle trips may increase by approximately one percent (in 2020) up to as much as 17 percent (in 2050) compared to non-

adjusted estimates. These increases would not alter the significance of the operational GHG emissions from development facilitated by the project as discussed further below.

b. State Regulations

California's Advanced Clean Cars program (Assembly Bill 1493)

Assembly Bill (AB) 1493 (2002), California's Advanced Clean Cars program (referred to as "Pavley"), requires CARB to develop and adopt regulations to achieve "the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles." On June 30, 2009, USEPA granted the waiver of Clean Air Act preemption to California for its GHG emission standards for motor vehicles beginning with the 2009 model year. Pavley I regulates model years from 2009 to 2016 and Pavley II, which is now referred to as "Low Emission Vehicle III GHG", regulates model years from 2017 to 2025. The Advanced Clean Cars program coordinates the goals of the Low Emission Vehicle, Zero Emissions Vehicles, and Clean Fuels Outlet programs, and would provide major reductions in GHG emissions. By 2025, when the rules will be fully implemented, new automobiles will emit 34 percent fewer GHGs and 75 percent fewer smog-forming emissions from their model year 2016 levels (CARB 2011). The implementation of these rules is currently delayed due to the SAFE Vehicle Rule, described under *Federal Regulations*.

California Global Warming Solutions Act of 2006

California's major initiative for reducing GHG emissions is outlined in AB 32, the "California Global Warming Solutions Act of 2006," which was signed into law in 2006. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 and requires CARB to prepare a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions. Based on this guidance, CARB approved a 1990 statewide GHG level and 2020 limit of 427 MMT CO₂e. The Scoping Plan was approved by CARB on December 11, 2008 and included measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since approval of the Scoping Plan.

Senate Bill 32

Senate Bill (SB) 32, signed into law on September 8, 2016, extends AB 32 by requiring the State to further reduce GHGs to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, as well as implementation of recently adopted policies and policies, such as SB 350 and SB 1383 (see below). The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan Update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally appropriate quantitative thresholds consistent with statewide per capita goals of 6 MT CO₂e by 2030 and 2 MT CO₂e by 2050 (CARB 2017). As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county, subregional, or regional level), but not for specific individual projects because they include all emissions sectors in the State (CARB 2017).

Senate Bill 100

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the State’s Renewables Portfolio Standard Program, which was last updated by SB 350 in 2015. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

Senate Bill 97

SB 97, signed in August 2007, added Section 21083.05 to and repealed Section 21097 from the Public Resources Code (PRC). This bill acknowledges that climate change is an environmental issue that requires analysis in CEQA documents. In March 2010, the California Natural Resources Agency adopted amendments to the CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and climate change impacts.

Senate Bill 375

SB 375, signed in August 2008, enhances the State’s ability to reach AB 32 goals by directing CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. SB 375 directs each of the State’s 18 major Metropolitan Planning Organizations to prepare a “sustainable communities strategy” (SCS) that contains a growth strategy to meet these emission targets for inclusion in the Regional Transportation Plan. On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. ABAG was assigned targets of a 10 percent reduction in GHGs from transportation sources by 2020 and a 19 percent reduction in GHGs from transportation sources by 2035. In the ABAG region, SB 375 also provides the option for the coordinated development of subregional plans by the subregional councils of governments and the county transportation commissions to meet SB 375 requirements.

Senate Bill 1383

Adopted in September 2016, SB 1383 requires the CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants. The bill requires the strategy to achieve the following reduction targets by 2030:

1. Methane – 40 percent below 2013 levels
2. Hydrofluorocarbons – 40 percent below 2013 levels
3. Anthropogenic black carbon – 50 percent below 2013 levels

The bill also requires the California Department of Resources Recycling and Recovery (CalRecycle), in consultation with CARB, to adopt regulations that achieve specified targets for reducing organic waste in landfills.

Executive Order B-55-18

On September 10, 2018, Governor Brown issued Executive Order B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets established by SB 375, SB 32, SB 1383, and SB 100.

California Integrated Waste Management Act (Assembly Bill 341)

The California Integrated Waste Management Act of 1989, as modified by AB 341, requires each jurisdiction's source reduction and recycling element to include an implementation schedule that shows: diversion of 25 percent of all solid waste by January 1, 1995, through source reduction, recycling, and composting activities; diversion of 50 percent of all solid waste on and after January 1, 2000; and diversion of 75 percent of all solid waste by 2020, and annually thereafter. CalRecycle is required to develop strategies to implement AB 341, including source reduction.

c. Local Regulations

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) does not have an adopted Threshold of Significance for construction-related GHG emissions. The BAAQMD recommends that lead agencies disclose construction generated emissions to make determinations of significance of GHG emissions, and incorporate best management practices to reduce emissions as possible.

Northern Sonoma County Air Pollution Control District

The Northern Sonoma County Air Pollution Control District (NSCAPCD) participates in an advisory role to help planners and local government with complex air quality issues, including GHGs (NSCAPCD 2020). The NSCAPCD commonly assists planners with zoning and land use; to assist in the establishment of GHG thresholds; to prevent and address air quality nuisances, and to identify potential pollution impacts to sensitive communities. The NSCAPCD also crafts incentive programs with GHG reduction co-benefits under its Vehicle Pollution Mitigation Program, state Carl Moyer Program, and other non-permit funded programs. For example, NSCAPCD's 3-2-1 Go Green! EV incentive program reduces GHGs by removing combustion vehicles from the roads and supports development of an EV charging infrastructure. The Carl Moyer program provides options to remove dirty diesel engines from operation with cleaner engines or conversion to electric operation.

Sonoma County Climate Change Action Resolution

The Regional Climate Protection Authority (RCPA) was formed in 2009 to coordinate countywide climate protection efforts among the County's nine cities and multiple agencies. The RCPA helps to set goals, pools resources, and formalizes partnerships in the county as it aims to create local solutions to complement State, federal, and private sector actions. Coordinating with RCPA, the Sonoma County Board of Supervisors adopted the Climate Change Action Resolution (County of Sonoma 2018). The resolution is intended to help create countywide consistency and clear guidance about coordinated implementation of the GHG reduction measures.

The resolution includes 20 goals to reduce GHG emissions, including the following:

1. Increase building energy efficiency
2. Increase renewable energy use
3. Switch equipment from fossil fuel to electricity
4. Reduce travel demand through focused growth
5. Encourage a shift toward low carbon transportation options
6. Increase vehicle and equipment fuel efficiency
7. Encourage a shift toward low carbon fuels in vehicles and equipment

8. Reduce idling
9. Increase solid waste diversion
10. Increase capture and use of methane from landfills
11. Reduce water consumption
12. Increase recycled water and greywater use
13. Increase water and wastewater infrastructure efficiency
14. Increase use of renewable energy in water and wastewater systems
15. Reduce emissions from livestock operations
16. Reduce emissions from fertilizer use
17. Protect and enhance the value of open and working lands
18. Promote sustainable agriculture
19. Increase carbon sequestration
20. Reduce emissions from the consumption of goods and services

The resolution also has the objective of increasing resilience to climate change by pursuing local actions that support the following nine goals:

1. Promote healthy, safe communities
2. Protect water resources
3. Promote as sustainable, climate resilient economy
4. Mainstream the use of climate projections
5. Manage natural buffer zones around community resources
6. Promote agricultural preparedness and food security
7. Protect infrastructure
8. Increase emergency preparedness and prevention
9. Monitor climate change and its effects

Sonoma County General Plan 2020

Section 8 of the Open Space and Resource Conservation Element of the Sonoma County General Plan 2020 contains energy goals that would have the effect of reducing GHG emissions, including:

Goal OSRC-14: Promote energy conservation and contribute to energy demand reduction in the County.

Objective OSRC-14.1: Increase energy conservation and improve energy efficiency in County government operations.

Objective OSRC-14.2: Encourage County residents and businesses to increase energy conservation and improve energy efficiency.

Objective OSRC-14.3: Reduce the generation of solid waste and increase solid waste reuse and recycling.

Objective OSRC-14.4: Reduce greenhouse gas emissions by 25 percent below 1990 levels by 2015.

Policy OSRC-14c: Continue to purchase and utilize hybrid, electric, or other alternative fuel vehicles for the County vehicle fleet; and encourage County residents and businesses to do the same.

Policy OSRC-14d: Support project applicants in incorporating cost effective energy efficiency that may exceed State standards.

Policy OSRC-14e: Develop energy conservation and efficiency design standards for new development.

Policy OSRC-14f: Use the latest green building certification standards, such as the Leadership in Energy and Environmental Design (LEED) standards, for new development.

Policy OSRC-14i: Manage timberlands for their value both in timber production and offsetting greenhouse gas emissions.

Plan Bay Area

Plan Bay Area 2040 is a state-mandated, integrated long-range transportation, land-use, and housing plan that would support a growing economy, provide more housing and transportation choices and reduce transportation-related pollution in the nine-county San Francisco Bay Area (Association of Bay Area Governments [ABAG] 2017). The SCS builds on earlier efforts to develop an efficient transportation network and grow in a financially and environmentally responsible way. Plan Bay Area 2040 would be updated every four years to reflect new priorities. A goal of the SCS is to “reduce vehicles miles traveled (VMT) per capita by 10 percent” (ABAG 2017). The Metropolitan Transportation Commission’s (MTC) Climate Initiatives Program key goals are to reduce transportation related emissions and vehicle miles traveled and encourage the use of cleaner fuels, which would reduce regional GHG emissions.

4.8.3 Impact Analysis

a. Thresholds of Significance

To determine whether a project would result in a significant impact to air quality, Appendix G of the CEQA Guidelines requires consideration of whether a project would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment
2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs

Individual projects do not generate enough GHG emissions to create significant project-specific environment effects. However, the environmental effects of a project’s GHG emissions can contribute incrementally to cumulative environmental effects that are significant, contributing to climate change, even if an individual project’s environmental effects are limited (*CEQA Guidelines* Section 15064[h][1]). The issue of a project’s environmental effects and contribution towards climate change typically involves an analysis of whether a project’s contribution towards climate change is cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (*CEQA Guidelines* Section 15064[h][1]).

CEQA Guidelines Section 15064.4 recommends that lead agencies quantify GHG emissions of projects and consider several other factors that may be used in the determination of significance of

GHG emissions from a project, including the extent to which the project may increase or reduce GHG emissions; whether a project exceeds an applicable significance threshold; and the extent to which the project complies with regulations or requirements adopted to implement a plan for the reduction or mitigation of GHG emissions. *CEQA Guidelines* Section 15064.4 does not establish a threshold of significance. Lead agencies have the discretion to establish significance thresholds for their respective jurisdictions, and in establishing those thresholds, a lead agency may appropriately look to thresholds developed by other public agencies, or suggested by other experts, as long as any threshold chosen is supported by substantial evidence (see *CEQA Guidelines* Section 15064.7[c]).

Neither the County nor NSCAPCD have adopted a numeric threshold of significance for determining impacts for GHG emissions. In the BAAQMD 2017 *CEQA Air Quality Guidelines*, the BAAQMD outlines an approach to determine the significance of projects. The BAAQMD recommends that lead agencies determine appropriate GHG emissions thresholds of significance based on substantial evidence in the record. The BAAQMD has not established a quantitative significance threshold for evaluating construction-related emissions. The following significance thresholds established in the BAAQMD 2017 *CEQA Air Quality Guidelines* for operational GHG emissions from land use development projects within the San Francisco Bay Area Air Basin are the most appropriate thresholds for use in determining the significance of project-level or plan-level impacts (BAAQMD 2017b):

1. Project-level
 - a. Compliance with a qualified GHG reduction strategy
 - b. Annual emissions less than 1,100 MT of CO₂e per year
 - c. Annual emissions less than 4.6 MT of CO₂e per service population (residents and employees) per year
2. Plan-level
 - a. Compliance with a qualified GHG reduction strategy
 - b. Annual emissions less than 6.6 MT of CO₂e per service population (residents and employees) per year

However, the BAAQMD's thresholds of significance were established based on achieving the 2020 GHG emission reduction targets set forth in the AB 32 Scoping Plan, and not the 2030 reduction targets of the SB 32 Scoping Plan. Therefore, although the BAAQMD has not yet quantified a threshold for 2030, reduction of the per service population thresholds by 40 percent would be consistent with state goals detailed in SB 32. As such, the adjusted per service population thresholds would be 2.8 MT of CO₂e per service population at the project-level and 4.0 MT of CO₂e per service population at the plan-level.

b. Methodology

GHG emissions facilitated by the project (construction) were calculated using CalEEMod. The model calculates emissions of the following GHGs: CO₂, N₂O, and CH₄, which are combined using each GHG's GWP and reported as CO₂e. GHG emissions include construction and demolition operations. The input data and GHG emission estimates the project are discussed below and in Section 4.3, *Air Quality*.

Construction Emissions

Project construction would primarily generate GHG emissions from construction equipment operation on site, construction worker vehicle trips to and from the site, and from export of materials off site. Construction input data for CalEEMod include but are not limited to: the anticipated start and finish dates of construction activity; inventories of construction equipment to be used; areas to be excavated and graded; and volumes of materials to be exported from and imported to the project site. The analysis assessed maximum daily emissions from individual construction activities, including demolition, site preparation, grading, building construction, paving, and architectural coating.

Operation Emissions

Operation of the replacement bridge would result in a negligible change in traffic volumes compared to the existing conditions at the bridge site. The addition of designated bike lanes and pedestrian walkways may reduce vehicle trips, thereby reducing gas consumption and GHG emissions from mobile sources. Emissions from energy use include electricity use. Lighting for the Project will be more energy efficient than lighting used on the existing bridge, thereby reducing energy consumption and GHG emissions from energy use. Potential changes in operational GHG emissions are assessed qualitatively.

c. Impact Analysis

| |
|---|
| Threshold: Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment? |
|---|

Impact GHG-1 PROJECT GENERATED GHG EMISSIONS WOULD BE PRIMARILY FROM CONSTRUCTION ACTIVITIES AND TEMPORARY IN NATURE. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Neither BAAQMD, CALTRANS, nor Sonoma County have established significance thresholds related to GHG emissions for construction activities because they are temporary in nature. GHG emissions for the project were calculated using models and methods described in the Construction Air Pollutant and Greenhouse Gas Emissions Analysis prepared by Illingworth and Rocklin. A description of how this analysis was conducted is found in Section 4.2, *Air Quality*, of this EIR. GHG emissions would result primarily from construction equipment and workers commuting to and from the project site. No traffic delays due to construction are anticipated since no road closures or detours are expected. Should they be needed, detours would be limited to evening hours when vehicular traffic would be minimal. Therefore, indirect emissions are not anticipated for the project. Direct emissions would be produced at different rates throughout the project depending on the activities involved during various project phases. Table 4.8-1 shows that the project would generate 1,996 metric tons of CO₂e over the three-year project duration from equipment operation, material haul trips, and worker commute trips. Construction emissions would result in a less-than-significant impact related to GHGs. No mitigation is required.

Table 4.8-1 Estimated Construction GHG Emissions

| Activity | GHG Emissions (MT CO ₂ e) |
|------------------------|--------------------------------------|
| Construction Emissions | 1,913 |
| Demolition Emissions | 83 |
| Total Emissions | 1,996 |

Source: Illingworth & Radkin 2021

The replacement bridge would result in a negligible change in traffic volumes under the build conditions compared to the no build conditions. GHG emissions from the operation and used of the bridge is not anticipated to change over the existing condition at the site. Therefore, operational emissions would result in a less-than-significant impact related to GHGs. No mitigation is required.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold: Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact GHG-2 THE PROJECT IS NOT IN CONFLICT WITH ANY APPLICABLE PLAN, POLICY, OR REGULATION ADOPTED FOR THE PURPOSE OF REDUCING GREENHOUSE GASES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

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

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

4.8.4 Cumulative Impacts

The impact of GHG emissions generated by the project is inherently cumulative. GHG emissions from one project cannot, on their own, result in changes in climatic conditions; therefore, the emissions from any project must be considered in the context of their contribution to cumulative global emissions, which is the basis for determining a significant cumulative impact. This is determined through the project's consistency with applicable GHG emission thresholds and applicable plans, policies, or regulations adopted for the purpose of reducing the emissions of GHGs. The current baseline is that of an existing bridge, and the project would not increase the amount of traffic or other generated GHG sources that could cumulatively contribute to increased GHG emissions. As discussed under Section 4.8.3, *Impact Analysis*, GHG emissions from the Project would not exceed the BAAQMD interpolated 2030 project-level threshold. The Project would be consistent with the 2017 Scoping Plan, Plan Bay Area 2040, County General Plan, and the County Climate Change Action Resolution. Therefore, the Project would not have a significant cumulative impact on GHG emissions.

This page intentionally left blank.

Hazards and Hazardous Materials Table of Contents

| | | |
|-------|--------------------------------------|--------|
| 4.9 | Hazards and Hazardous Materials..... | 4.9-1 |
| 4.9.1 | Setting..... | 4.9-1 |
| 4.9.2 | Regulatory Setting | 4.9-5 |
| 4.9.3 | Impact Analysis | 4.9-8 |
| 4.9.4 | Cumulative Impacts | 4.9-14 |

4.9 Hazards and Hazardous Materials

This section evaluates the potential impacts relating to hazards and hazardous materials impacts associated with implementation of the proposed Project.

4.9.1 Setting

Definition of Hazardous Materials

The California Health and Safety Code defines a hazardous materials, in part, as a material that “because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment.”

Hazardous materials are used and transported throughout Sonoma County in various agricultural, industrial, commercial, medical, research, and household settings. Numerous federal and State laws, as well as local policies and plans, control the production, transportation, storage, and use of these hazardous materials and their waste products.

Land Use Patterns

Past and present land use patterns are good predictors of the potential for past contamination by hazardous materials and the current use and storage of hazardous materials. Industrial sites and certain commercial land uses, such as gas stations, are more likely to use and store large quantities of hazardous materials than residential land uses. Land use patterns are also useful for identifying the location of sensitive receptors, such as schools, day-care facilities, hospitals, and nursing homes. Industrial and commercial land uses are concentrated along major transportation corridors, such as State Highway 116, Bohemian Highway and in downtown areas.

The Project site is not located within 0.25 mile of a school or other sensitive receptors.

Existing Hazardous Material Contamination

This section is based on the Project Preliminary Phase 1 Initial Site Assessment (ISA) completed by PARIKH Consultants in May of 2021. The hazardous waste/materials study area consists of properties located within and adjoining to the Project footprint. The Project footprint includes the existing and proposed Bohemian Highway Bridge alignments, all proposed roadway improvements at the bridge approaches, and Right of Way required for the proposed Project.

The ISA was conducted to identify potential and known contaminant sources or recognized environmental conditions (REC), historical RECs (HREC), and controlled RECs (CREC) in the Project limits. The ISA was prepared in general accordance with the ASTM International, Inc. (ASTM), Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process E1527-13 (ASTM Standard) and Caltrans ISA procedures.

Several existing contaminants, including aerielly deposited lead, asbestos containing materials, lead paint and contaminated soil, may be present in or near the Project site. Due to the age of the existing structure, asbestos may be present in concrete and utility line encasement materials and could be mobilized during demolition activities. Similarly, lead may be present in paint that was sold prior to 1978 or in soil that was contaminated by leaded gasoline.

Aerially Deposited Lead (ADL)

The Project area contains several state and local roads. Historical photographs, topographic maps, and aerial photographs show that Monte Rio roads have supported vehicular traffic from the early 1900s.

Due to vehicular activity over the years that lead compounds were added to gasoline, soils in the Project area have the potential for lead contamination. Lead levels in surface soils along heavily used roads can reach concentrations in excess of the hazardous waste threshold, requiring disposal at either a Class I landfill or on-site stabilization. Additional testing will be completed prior to initiating construction. Special health and safety procedures would be in effect for the workers working near lead contaminated areas to mitigate the hazard.

Asbestos Containing Materials (ACM)

A limited asbestos survey for the Monte Rio Bridge was conducted by ACC Environmental Consultants, Inc. for Construction Testing Services in 2012. The survey presumed ACM to be present surrounding the transit pipe located under the downstream side of the bridge. Concrete from the current bridge sampled from sidewalks columns/supports, roadway/span, and rails was tested from which no asbestos was detected.

Possible or potential ACM were discovered during the site inspection at four sites: an old bridge foundation in the riverbed; a retaining wall next to Main Street; old building foundations and driveways at the southern section of the proposed bridge; and large concrete blocks at the north-west Project site. These four sites are described in detail below.

The old concrete bridge foundation is located in the Russian River bed approximately 135 feet downstream of the current bridge and to the south of the current river channel, and lays directly underneath the proposed replacement bridge. The foundation is approximately 10 by 20 feet, depth is not known, and appears to be the only foundation currently visible or exposed. The construction and demolition dates for the old bridge are not known however the bridge is visible in historical photographs from the early 1900's. The foundation currently appears stable and not friable, however it will be tested for ACM prior to removal.

A retaining wall bordering the sidewalk on the northern side of Main Street at the southern end of the proposed new bridge is a possible source of ACM. The wall was presumably built to hold fill for the western approach to Dutch Bill Creek bridge built in 1953. The concrete of the retaining wall currently appears stable and not friable. Although not anticipated to be disturbed as part of the Project, it would be tested for ACM if it is to be removed or disturbed in any way related to the Project.

Old concrete building foundations, paths, and driveways are located at 9908 Main Street (APN 095-160-006). Aerial photographs suggest the building was demolished between 1965 and 1971. The type of building and or business was not revealed during this investigation. The concrete in question appears stable and not friable, however it will be tested for ACM if it is to be removed or disturbed in any way related to the Project.

Several large concrete blocks are located on the northern side of the Project underneath the proposed bridge where the river access road turns east to head underneath the current bridge. The concrete appears to be debris and of different generations and compositions. The concrete appears stable and not friable, however it will be tested for ACM if it is to be removed or disturbed in any way related to the Project.

Further ACM investigations will be performed prior to initiating construction work by an inspector certified under Asbestos Hazardous Emergency Response Act (AHERA) Toxic Substances Control Act (TSCA) Title II and certified by Cal OSHA under State of California rules and regulations (California Code of Regulations, Section 1529). If determined present, ACM will be abated by using contractors certified to perform such work, and in accordance with state and federal regulations.

Lead Based Paint (LBP)

A limited lead survey for the Bohemian Highway Bridge was conducted for Construction Testing Services in 2012. The survey determined that three out of six paint samples from the current bridge are lead based (ie. > 0.5% Pb).

No other areas of suspected lead based paint were identified during the site reconnaissance for the Project area.

LBP will be abated by using contractors certified to perform such work, in accordance with state and federal regulations.

On-Site Dumping

Site reconnaissance identified dumping and burning of household items under the southern section of the current bridge and Dutch Bill Creek Bridge directly next to the southern part of the site. The rubbish and site appeared to have been part of an encampment at some stage. The garbage was moderate in extent with strong burnt plastic odors. This material contains potentially hazardous material and will be disposed of by appropriately qualified personnel. Underlying soils will be tested for hazardous substances prior to initiating construction. If remediation is necessary, then that would be completed by using contractors certified to perform such work, and in accordance with state and federal regulations

Petroleum Products

Site address 9908 Main St (APN 095-160-006) located underneath the southern section of the proposed bridge appears to have stored vehicles in various states of repair for some time. Petroleum products from these vehicles represent a potential REC and testing of the underlying soils will be undertaken prior to construction starting by suitably licensed personnel to determine the type and concentration of any hazardous substances potentially present. Any contaminated materials will be excavated and disposed of following state and federal regulations.

Site address 9906 Main St (APN 095-160-005) represents a potential REC from petroleum products and is discussed below.

Other Toxic Substances

Environmental Data Resources, Inc. (EDR) was contracted to provide aerial photography for the Project. The aerial photos show that the Project vicinity, at least since the 1950's, has been used as transport, medium density housing, minimal small businesses, and relatively large tracks of forest. Except for small areas, the majority of the forested areas are probably regrowth. A search of environmental regulatory databases was conducted for the Project area and surrounding properties. The database search was conducted by EDR to determine whether documentation exists related to environmental incidents at the site or surrounding properties.

The sites identified in the EDR search were evaluated with respect to their potential to adversely impact the Project. Three main criteria were used to evaluate whether the EDR listed sites warranted further consideration: (1) proximity to the Project site (less than 300 feet from edge of proposed right of way); (2) hydraulically upgradient with respect to groundwater flow; and (3) hydraulically upgradient with respect to surface water flow/stormwater runoff. In addition to the EDR, files at the Regional Water Quality Control Board (RWQCB) and Department of Toxic Substances Control (DTSC) were researched through reviewing the Envirostor and Geotracker online databases.

Review of the EDR database identified three leaking underground storage tank (LUST) sites within the search radius. The closest LUST is located at 9906 Main Street (APN 095-160-005) and was located directly adjacent to the southern foundation of the proposed bridge. The case type was a LUST Cleanup Site with a status of “completed” and “case closed”. The site was visually inspected as part of this ISA. New pavement has been installed and no evidence of an existing underground storage tank (UST) or LUST was visible. One of the USTs apparently failed a pressure test in 1985 and subsequently an “Underground storage tank unauthorized release (Leak)/Contamination site report” for “unleaded supreme gasoline” was filed. The two USTs were removed without an appropriate permit in August of 1986, and as such, no soil sampling and/or analysis was undertaken to determine if the site was contaminated by a LUST. Documents pertaining to the site describe legal proceedings as to whom was responsible for investigations to determine if soil and groundwater at the site is/was contaminated. Subsequently, in March of 2012, the California Regional Water Quality Control Board determined that the case will be closed until such time as evidence of a petroleum discharge is submitted for review by the Regional Water Board (File: Chevron #9-2687, 9906 Main Street, Monte Rio, California; Case No. 1TSO012). If soil is to be disturbed at this site or if ownership is transferred as part of the Project, then additional environmental investigation must be undertaken to determine the presence and/or extent of soil and groundwater contamination. Sonoma County has committed to do additional testing in this area and if necessary remediate the area prior to beginning construction work.

Noels Automotive, a General Automotive Repair Shop, located directly next to the south-west Project site (APN 095-160-004), is listed as a RCRA Non-Generator of hazardous waste. The site is not listed as containing a UST and no violations were found.

Ferns Grocery located at 20348 Highway 116, located about 500 feet east of the Project site on the north side of the Russian River, is listed as a LUST Cleanup Site with a status of “Completed” and “Case Closed”. Two USTs were removed from the site in 1999 and monitoring wells installed. Subsequent groundwater tests have not detected petroleum products.

Bohemian Grove located at 20601 Bohemian Avenue, approximately 2,600 feet east of the Project on the southern side of the Russian River, is listed as a LUST Cleanup Site with a status of “Completed” and “Case Closed”.

The Northwestern Railroad (broad gauge) and the North Pacific Coast Railroad (narrow gauge) operated in and through Monte Rio from 1874 until 1935. Records and historic photographs show North Pacific Coast Railroad primarily used wood fired steam locomotives. The Northwestern Railroad appeared to use coal fired steam locomotives.

Potentially toxic substances from the historic railways and engines could include heavy metals, creosote, and polycyclic aromatic hydrocarbons (PAHs). If these substances are present they will likely be concentrated at the site of the old railway station near the intersection of Main Street and Moscow road. This site is hydraulically up-gradient (groundwater) from the Project and is currently

paved. Record searches did not determine if railway ties were creosote treated. Suitable testing methods will be employed to determine the existence and concentrations of toxic substances prior to beginning construction. If contaminants are detected, toxic material will be disposed of following state and federal regulations

Airports and Aircraft Hazards

The Project site is not within an airport influence area, defined as an area in which current or future airport-related noise, over flight, safety, or airspace protection factors may significantly affect land uses or necessitate restrictions on those uses.

Wildland Fire Hazards

Wildland Fire Hazards are discussed in Section 4.19, *Wildfire*.

4.9.2 Regulatory Setting

The management of hazardous materials and hazardous wastes is regulated at federal, state, and local levels, including through programs administered by the US Environmental Protection Agency (EPA); agencies within the California EPA, such as the DTSC; federal and state occupational safety agencies; and the Sonoma County Certified Unified Program Agency Hazardous Materials Unit, as discussed further below.

a. Federal Regulations

Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA)

These acts established a program administered by the USEPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act, which affirmed and extended the “cradle to grave” system of regulating hazardous wastes. Among other things, the use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by the Hazardous and Solid Waste Act.

Comprehensive Environmental Response, Compensation and Liability Act, amended by the Superfund Amendments and Reauthorization Act (1986)

This law was enacted in 1980 and provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Among other things, Comprehensive Environmental Response, Compensation and Liability Act established requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. Comprehensive Environmental Response, Compensation and Liability Act also enabled revision of the National Contingency Plan, which provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The National Contingency Plan also established the National Priorities List.

Federal Insecticide, Fungicide, and Rodenticide Act

This Act (7 U.S. Code [USC] 136 et seq.) provides Federal control of pesticide distribution, sale, and use. The USEPA was given authority under the Act to study the consequences of pesticide usage, and to require users (farmers, utility companies, and others) to register when purchasing pesticides. Later amendments to the law required users to take exams for certification as applicators of pesticides. All pesticides used in the United States must be registered (licensed) by the USEPA. Registration assures that pesticides will be properly labeled and that, if used in accordance with specifications, they will not cause unreasonable harm to the environment.

Lead-Based Paint Elimination Final Rule 24 Code of Federal Regulations

Governed by the U.S. Housing and Urban Development, regulations for LBP are contained in the Lead-Based Paint Elimination Final Rule 24 Code of Federal Regulations (CFR) 33, which requires sellers and lessors to disclose known LBP and LBP hazards to prospective purchasers and lessees. Additionally, all LBP abatement activities must follow California and federal occupational safety and health administrations (California Occupational Safety and Health Administration [Cal/OSHA] and federal Occupational Safety and Health Administration [OSHA]), respectively and with the State of California Department of Health Services requirements. Only LBP trained and certified abatement personnel can perform abatement activities. All lead LBP removed from structures must be hauled and disposed of by a transportation company licensed to transport this type of material at a landfill or receiving facility licensed to accept the waste.

U.S. Environmental Protection Agency

The USEPA is the agency primarily responsible for enforcement and implementation of Federal laws and regulations pertaining to hazardous materials. Applicable Federal regulations pertaining to hazardous materials are contained in the CFR Titles 29, 40, and 49. Hazardous materials, as defined in the CFR, are listed in 49 CFR 172.101. The management of hazardous materials is governed by the following laws:

1. RCRA of 1976 (42 USC 6901 et seq.); Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (also called the Superfund Act) (42 USC 9601 et seq.)
2. Federal Insecticide, Fungicide, and Rodenticide Act (7 USC 136 et. Seq.)
3. Superfund Amendments and Reauthorization Act of 1986 (Public Law 99 499)

These laws and associated regulations include specific requirements for facilities that generate, use, store, treat, and/or dispose of hazardous materials. USEPA provides oversight and supervision for Federal Superfund investigation/remediation projects, evaluates remediation technologies, and develops hazardous materials disposal restrictions and treatment standards.

b. State Regulations

Department of Toxic Substances Control (DTSC)

As a department of the California Environmental Protection Agency, DTSC is the primary agency in California that regulates hazardous waste, cleans up existing contamination, and looks for ways to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of RCRA and the California Health and Safety Code.

DTSC also administers the California Hazardous Waste Control Law (HWCL) to regulate hazardous wastes. While the HWCL is generally more stringent than RCRA, until the USEPA approves the California program, both state and federal laws apply in California. The HWCL lists 791 chemicals and approximately 300 common materials that may be hazardous; establishes criteria for identifying, packaging, and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal, and transportation; and identifies some wastes that cannot be disposed of in landfills.

Government Code Section 65962.5 requires the DTSC, the State Department of Health Services, the State Water Resources Control Board, and CalRecycle to compile and annually update lists of hazardous waste sites and land designated as hazardous waste sites throughout the state. The Secretary for Environmental Protection consolidates the information submitted by these agencies and distributes it to each city and county where sites on the lists are located. Before the lead agency accepts an application for any development project as complete, the applicant must consult these lists to determine if the site at issue is included.

If any soil is excavated from a site containing hazardous materials, it would be considered a hazardous waste if it exceeded specific criteria in Title 22 of the California Code of Regulations. Remediation of hazardous wastes found at a site may be required if excavation of these materials is performed, or if certain other soil disturbing activities would occur. Even if soil or groundwater at a contaminated site does not have the characteristics required to be defined as hazardous waste, remediation of the site may be required by regulatory agencies subject to jurisdictional authority. Cleanup requirements are determined on a case-by-case basis by the agency taking jurisdiction.

Hazardous Waste Control Act

The hazardous waste management program enforced by DTSC was created by the Hazardous Waste Control Act (California Health and Safety Code Section 25100 et seq.), which is implemented by regulations described in California Code of Regulations (CCR) Title 26. The State program is similar to, but more stringent than, the Federal program under RCRA. The regulations list materials that may be hazardous, and establish criteria for their identification, packaging, and disposal. Environmental health standards for management of hazardous waste are contained in CCR Title 22, Division 4.5. As required by California Government Code Section 65962.5, DTSC maintains a Hazardous Waste and Substances Site List for the State called the Cortese List.

California Fire and Building Code

The 2016 Fire and Building Code (2016) establishes the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare for the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. The provisions of this code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure or any appurtenances connected or attached to such building structures throughout the State of California.

c. Local Regulations

Sonoma County Operational Area Hazard Mitigation Plan

The Sonoma County Operational Area Hazard Mitigation Plan assesses the County's vulnerabilities to various hazards and presents mitigation strategy, including goals, objectives, and actions that the County will strive to implement over the next five years. These mitigation actions are intended to reduce the disruption or loss of life, property, and economy that might result from a natural disaster. The hazard and risk assessment focuses on earthquake, flood, wildland fire, and landslide hazards, as these are considered to constitute the greatest risk to the County based on past disaster events, future probabilities, and degree of vulnerability. The 2016 update to this plan includes climate change related implications on hazard trends, including sea level rise and drought (County of Sonoma 2017).

Sonoma County Environmental Health and Safety Department

The Sonoma County Environmental Health and Safety Department protects health, prevents disease, and promotes health for all persons in Sonoma County. The department has programs that employ strategies to prevent health hazards. These include a LUST oversight program that oversees the investigation and cleanup of fuel releases from underground storage tanks in most areas of the County. Other programs include healthy home programs, septic disposal inspections, and a solid waste program.

Sonoma County General Plan

The Sonoma County General Plan includes policies that aim to reduce potential damage from hazardous materials, including the following:

Goal PS-4: Prevent unnecessary exposure of people and property to risks of damage or injury from hazardous materials.

Objective PS-4.2: Regulate the handling, storage, use, and disposal of hazardous materials in order to reduce the risks of damage and injury from hazardous materials

Policy PS-4a: While maintaining the autonomy granted to it pursuant to State zoning laws, implement Federal, State, and County requirements for the storage, handling, disposal, and use of hazardous materials, including requirements for management plans, security precautions, and contingency plans.

Policy PS-4d: Work with applicable regulatory agencies to regulate the transportation of hazardous materials consistent with adopted County policies.

4.9.3 Impact Analysis

a. Methodology and Thresholds of Significance

The following thresholds are based on *CEQA Guidelines* Appendix G. For purposes of this Project EIR, impacts related to hazards and hazardous materials are considered significant if implementation of the proposed Project would:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment
3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school
4. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area
6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan
7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires

| |
|--|
| <p>Threshold: Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or would the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment, or would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?</p> |
|--|

Impact HAZ-1 THE PROJECT WOULD NOT CREATE A SIGNIFICANT HAZARD TO THE PUBLIC OR THE ENVIRONMENT THROUGH THE ROUTINE TRANSPORT, USE, OR DISPOSAL OF HAZARDOUS MATERIALS, NOR THROUGH REASONABLY FORESEEABLE UPSET AND ACCIDENT CONDITIONS INVOLVING THE RELEASE OF HAZARDOUS MATERIALS INTO THE ENVIRONMENT. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Construction of the proposed Project would include the use of construction machinery that would involve the transport, use, and disposal of hazardous materials such as paints, solvents, oils, grease, and caulking. Additionally, hazardous materials would be needed for fueling and servicing construction equipment. These types of hazardous materials are not acutely hazardous, and all storage, handling, use, and disposal of these materials are regulated by County, State, and Federal regulations and compliance with applicable standards discussed in Section 4.9.2. In addition, implementation of standard BMPs under the SWPPP would further reduce the potential of accidental release or exposure. Compliance would ensure impacts from construction-related hazardous materials are less than significant.

Based on the age of the existing structure to be demolished part of the Project may contain hazardous materials such as lead-based paint (LBP) and aerially deposited lead (ADL). Exposure to lead can cause adverse health effects, including disturbance of the gastrointestinal system, anemia, kidney disease, and neuromuscular and neurological dysfunction (in severe cases). Lead containing materials associated with the Project would be handled in compliance with Cal/OSHA regulations. The CCR Title 14, Section 1532.1, requires testing, monitoring, containment, and disposal of lead-based paints and materials, such that exposure levels do not exceed Cal/OSHA standards. Compliance with applicable standards would ensure impacts related to hazardous materials are less than significant.

ACMs are regulated as a hazardous air pollutant under the purview of the USEPA. As a worker safety hazard, they are also regulated under the authority of Cal/OSHA and by the Northern Sonoma County Air Pollution Control District. The existing structure would be demolished; any ACMs present would be abated in accordance with State and Federal regulations prior to the start of demolition or removal activities and in compliance with all applicable existing rules and regulations, including the Bay Area Air Quality Management District. These programs would ensure that asbestos removal would not result in the release of hazardous materials to the environment that could impair human health. Therefore, the impact related to ACMs would be less than significant.

Compliance with existing applicable regulations and policies would minimize risks from routine use, transport, handling, storage, disposal, and release of hazardous materials. Oversight by the appropriate federal, State, and local agencies and compliance by new development with applicable regulations related to the handling and storage of hazardous materials would minimize the risk of the public's potential exposure to these substances. Therefore, impacts from a hazard to the public or the environment through routine transport, use or disposal of hazardous materials and reasonably foreseeable upset and/or accident conditions would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold: Would the Project be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Impact HAZ-2 THE PROJECT COULD RESULT IN DEVELOPMENT ON SITES CONTAMINATED WITH HAZARDOUS MATERIALS. HOWEVER, COMPLIANCE WITH APPLICABLE REGULATIONS RELATING TO SITE REMEDIATION WOULD MINIMIZE IMPACTS FROM DEVELOPMENT ON CONTAMINATED SITES, RESULTING IN A LESS THAN SIGNIFICANT IMPACT WITH MITIGATIONS INCORPORATED.

Sites that potentially contain hazardous materials in the Project area include generators of hazardous waste, such as historic gas stations and industrial uses. As discussed in Section 4.9-1, an ISA was completed for the Project area that revealed several locations that may contain HREC's and REC's (Parikh Consultants, 2021).

Additional testing would precede construction, and if necessary remediation and cleanup would occur under the supervision of the North Coast Regional Water Quality Control Board, the Sonoma County Local Oversight Program, or DTSC, before construction activities could begin. The agency responsible for oversight would determine the types of remediation and cleanup required, and could include excavation and off-haul of contaminated soils, capping soils to ensure the site does not expose a health risk to construction workers or future users.

It is also possible that underground storage tanks (UST) in use prior to permitting and record keeping requirements may be present in the work area. If an unidentified UST were uncovered or disturbed during construction activities, it would be removed under permit from the County; if such removal would potentially undermine the structural stability of existing structures, foundations, or impact existing utilities, the tank might be closed in place without removal. Tank removal activities could pose both health and safety risks, such as the exposure of workers, tank handling personnel, and the public to tank contents or vapors. Potential risks, if any, posed by USTs would be minimized by managing the tank according to existing standards enforced by DTSC and regulatory agencies subject to jurisdictional authority.

The extent to which groundwater may be affected by an UST or other potential contamination source, if at all, depends on the type of contaminant, the amount released, the duration of the release, distance from source, and depth to groundwater. If groundwater contamination is identified, characterization of the vertical and lateral extent of the contamination and remediation activities would be required by the North Coast Regional Water Quality Control Board prior to the commencement of any new construction activities that would disturb the subsurface. If contamination exceeds regulatory action levels, the County would be required to undertake remediation procedures prior to grading and development under the supervision of the North Coast Regional Water Quality Control Board, depending upon the nature of any identified contamination. Compliance with existing State and local regulations via mitigations measures described below would reduce potential impacts to less than significant.

Mitigation Measures

HAZ-1- Conduct Phase II Site Assessment Prior to Construction

The Project ISA determined that for areas identified as high or medium risk for REC's, potential REC's, and environmental areas of concern, a Phase II screening of the subsurface soils or groundwater will be completed within the identified Project boundaries. The Phase II screening will investigate the Project area where construction is anticipated to disturb the subsurface soil, encounter groundwater, or disturb or remove existing structures. Should the preliminary screening indicate the presence of soil or groundwater contamination within the Project area, a Phase II assessment will be conducted to investigate the depth and lateral extent of contamination within the Project area.

The Phase II assessment will include sampling and laboratory analysis to confirm the presence or absence of hazardous materials and may include the following:

- Surficial soil and water samples
- Testing of underground storage tanks
- Subsurface soil borings
- Groundwater monitoring well installation, sampling, and analysis (may be appropriate on neighboring properties as well to determine the presence of contamination)

The County shall ensure proper implementation the recommendations with the Project ISA by incorporating the following task as part of the Project design and construction specifications. These tasks will be completed prior to construction activities and include the following measures:

- It is highly likely that the surface soils along the Project area are affected by ADL. Therefore, it is recommended that surface samples of soil be collected and analyzed for total lead.
- Four concrete occurrences were identified within the Project site that have potential for ACM and should be analyzed if they are to be disturbed or interfered with. This work should be performed by an inspector certified by AHERA under TSCA Title II and certified by Cal OSHA under State of California rules and regulations (California Code of Regulations, Section 1529).
- Lead based paint and ACM should be abated by using a contractor certified to perform such work. Further ACM testing should be performed during the design phase.
- On-site dumping and burning of household items was identified under the southern section of the current bridge and Dutch Bill Creek Bridge directly next to the southern part of the site. This material contains potentially hazardous material and should be disposed of by appropriately qualified personnel and soils tested.
- Site address 9908 Main St (APN 095-160-006) located underneath the southern section of the proposed bridge appears to have stored vehicles in various states of repair for some time. Petroleum products from these vehicles could represent a potential REC and testing of these soils should be undertaken by suitably licensed personnel to determine the type and concentration of any hazardous substances.
- Site address 9906 Main St (APN 095-160-005) possibly contained a LUST. Two USTs were removed from the site in 1986 without permitting and environmental samples to determine the presence and/or extent of soil and groundwater contamination. It is recommended that an environmental investigation be undertaken to determine the presence and/or extent of soil and groundwater contamination at the site if soil is to be disturbed and/or if ownership is to be transferred as part of the Project process.
- Part of the Project site was occupied by historic railroads and located hydraulically up-gradient (groundwater) from the Project. Potential toxic substances from the historic railways and engines could include heavy metals, creosote, and polycyclic aromatic

hydrocarbons (PAHs). Suitable testing methods should be employed to determine the existence and concentrations of toxic substances.

HAZ-2- Develop and Implement Plans to Address Worker Health and Safety

If results of the Phase II testing results in positive identification of REC's, The County DTPW or construction contractor will develop and implement the necessary plans and measures required by Caltrans and federal and state regulations, including a health and safety plan, BMPs, and an injury and illness prevention plan. The plans will be prepared and implemented to address worker safety when working with potentially hazardous materials, including LBP, ACM, ADL, UST/ LUST sites and other materials within the right-of-way during any construction activity.

Significance After Mitigation

Impacts would be less than significant with mitigation.

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

Impact HAZ-3 THE PROJECT SITE IS NOT LOCATED WITHIN TWO MILES OF AN AIRPORT. THE PROJECT WOULD NOT RESULT IN A SAFETY HAZARD OR EXCESSIVE NOISE FOR PEOPLE RESIDING OR WORKING IN OR NEAR THE PROJECT SITE. THERE WOULD BE NO IMPACT.

The Project is not in the general vicinity of an airport, and none of the noise contours overlap with the work site. Therefore, no substantial noise exposure from airport noise would occur to construction workers or residents of the Project, and similarly, there would be no safety concerns associated with the need to limit development in runway protection zones. Therefore, the Project would not result in a safety hazard or excessive noise for people in the County, and no impact would occur.

Mitigation Measures

No mitigation would be required.

Significance After Mitigation

No impacts would occur and mitigation is not required.

Threshold: Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Impact HAZ-4 THE PROJECT WOULD NOT RESULT IN ANY PHYSICAL CHANGES THAT COULD INTERFERE WITH OR IMPAIR EMERGENCY RESPONSE OR EVACUATION. THEREFORE, THE PROJECT WOULD NOT RESULT IN INTERFERENCE WITH THESE TYPES OF ADOPTED PLANS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The existing bridge will remain in use throughout construction. Construction of the Project could result in some temporary disruptions to traffic flow, where temporary lane shifts or lane closures are required. During Project construction, emergency vehicles may need to stop temporarily or slow in order to ensure that they can safely pass through the Project area. Prior to construction, the

Project contractor will prepare a Traffic Control Plan as described in section 4.16, *Transportation*. Implementation of the plan, including notifying all emergency services prior to construction so they can plan alternative routes; handling and guiding traffic through and around work zones; and communicating information about detours, temporary closures, and emergency access will ensure that construction-related effects of the project on emergency response or evacuation plans are less than significant.

Once the new bridge is completed, traffic will be moved to that structure and the existing bridge will be closed to traffic. The Project would not result in changes to emergency evacuation routes, nor would it increase traffic or roadway congestion such that use of an evacuation route would be hindered. Therefore, the Project would not impair implementation of or physically interfere with evacuation or emergency response plans. The impact related to emergency response and evacuation plans would be less than significant.

Mitigation Measures

No mitigation measures would be required

Significance After Mitigation

Impacts would be less than significant without mitigation.

| |
|---|
| Threshold: Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires? |
|---|

Impact HAZ-5 THE PROJECT WOULD NOT EXPOSE PEOPLE OR STRUCTURES TO RISK OF LOSS, INJURY, OR DEATH. THERE WOULD BE NO IMPACT.

Refer to Section 4.19, *Wildfire* for analysis of impacts related to wildfire.

The Project is located in an area of moderate fire hazard (Sonoma County General Plan, 2006). However, the Project would not expose people to increased risk from wildland fires beyond existing conditions. It would not construct buildings that would be occupied by people or structures that would be affected by wildland fires. The proposed Project consists of replacing an existing bridge and would not increase the vehicle capacity of the bridge. The bridge would be designed to current American Association of State Highway and Transportation Officials Standards to adequately accommodate emergency vehicles. Therefore, no impacts to people or structures from wildland fires are anticipated with the implementation of the proposed Project.

Mitigation Measures

No mitigation measures would be required

Significance After Mitigation

Impacts would be less than significant without mitigation.

4.9.4 Cumulative Impacts

A project's environmental impacts are "cumulatively considerable" if the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (*CEQA Guidelines*)

Section 15065[a][3]). The geographic scope for cumulative hazardous materials impacts is limited to projects within 0.25 mile of the sites. This geographic scope is appropriate for hazardous materials because risks associated with hazards and hazardous materials occur largely in a site-specific and localized context as adverse impacts from hazardous materials release or spill diminish in magnitude with distance.

Development in the vicinity of any identified hazardous materials sites may increase the population exposed to the use and transport of hazardous materials; the routine use, storage, and disposal of hazardous materials; listed hazardous materials sites; and subject to emergency response and evacuation plans. Implementation of existing laws and regulations, including remedial action on contaminated sites, as discussed with regard to the Project under Impacts HAZ-1 through HAZ-4, would avoid potential hazard impacts.

Since hazards and hazardous materials are required to be examined as part of the permit application and review process, potential impacts associated with future individual projects would be adequately addressed prior to permit approval.

With adherence to existing regulatory standards for hazardous materials, no significant cumulative human health impacts would occur, and the Project would not have a cumulatively considerable contribution to a significant cumulative impact related to hazards and hazardous materials.

This page intentionally left blank.

Hydrology and Water Quality Table of Contents

| | | |
|--------|----------------------------------|---------|
| 4.10 | Hydrology and Water Quality..... | 4.10-1 |
| 4.10.1 | Environmental Setting | 4.10-1 |
| 4.10.2 | Regulatory Setting | 4.10-9 |
| 4.10.3 | Impact Analysis | 4.10-14 |
| 4.10.4 | Cumulative Impacts | 4.10-21 |

Tables

| | | |
|--------------|---|--------|
| Table 4.10-1 | Beneficial Uses | 4.10-5 |
| Table 4.10-2 | Russian River Waterbody Impairments | 4.10-5 |

Figures

| | | |
|---------------|--|--------|
| Figure 4.10-1 | Russian River Watershed | 4.10-2 |
| Figure 4.10-2 | Receiving Water Bodies in Project Vicinity | 4.10-3 |
| Figure 4.10-3 | FEMA Floodplain Map..... | 4.10-9 |

4.10 Hydrology and Water Quality

This section presents the existing conditions, summarizes the regulatory and planning framework, and analyzes the impacts to the surface water and groundwater resources- relative to the proposed Project. Impacts to water supply and wastewater treatment are discussed in Section 4.18, *Utilities and Service Systems*. Extensive overlap exists in regulatory programs governing environmental aspects of water quality, drinking water quality, and the public health aspects of water supply protection. There is also overlap in the characterization of groundwater aquifers as potential water supply sources for the community of Monte Rio.

4.10.1 Environmental Setting

Sonoma County falls into seven distinct watersheds, of which the Russian River watershed is the largest in terms of area, runoff volume, number of cities it passes through, and population adjacent to it. The Russian River watershed encompasses areas of Sonoma and Mendocino counties (See Figure 4.10-1). Due to the large size of the Russian River watershed and the complexity of the coastal watersheds, it and several of the coastal watersheds are divided into subbasin units whose size and boundaries are determined by several common traits, including runoff patterns, geology, topography, vegetation, and land use.

Per the CalWater watershed delineation in Caltrans' Water Quality Planning Tool (2012), the Project area is within an undefined Hydrologic Sub-Area Guerneville (#114.11) of the Lower Russian River Hydrologic Area and Russian River Hydrologic Unit. The watershed drainage areas at the Project site were delineated using the United States Geological Survey (USGS) StreamStats application. At the existing bridge, the watershed drains an area of 1,375.7 square miles (USGS, 2020). The proposed bridge will be at an alignment downstream of the existing bridge. Dutch Bill Creek, a tributary to the Russian River, joins with the Russian River in between alignments of the existing and proposed bridges (see Figure 4.10-2). At the proposed bridge, the watershed drains an area of 1,387.7 square miles (USGS, 2020).

The topography along the Project area is relatively flat due to the close proximity to the Russian River. (Environmental Systems Institute (ESRI, 2020). Accordingly, elevations in the Project area range from near sea level to 40 feet above mean sea level at the Bohemian Highway.

According to the Köeppen climate classification system, the Project area has a cold-summer climate (CSC) classification, characterized as warm and temperate. A climate summary for the nearest National Oceanic and Atmospheric Administration (NOAA) weather station with similar elevation and topography to the Project (Sonoma Station 048351) reports the following precipitation and temperature information (Western Regional Climate Center, 2016):

Sonoma Station 048351

- Average annual rainfall for Sonoma is 29.43 inches
- average temperatures range seasonally from 44.2 to 73.7 degrees Fahrenheit (°F)

Figure 4.10-1 Russian River Watershed



Source: ESRI, USGS, 2020

Figure 4.10-2 Receiving Water Bodies in Project Vicinity



Source: ESRI, 2020

a. Water Quality

Water quality is a concern due to its potential impact on human health, enterprise, aquatic organisms, and ecosystem conditions. Quality is determined by factors such as native condition of surface water and groundwater and sources of contamination (natural and human induced).

Surface Water

The Project's receiving waterbody is the Russian River. At the Project site, the Russian River flows generally in the east to west direction. Dutch Bill Creek joins with the Russian River in between alignments of the existing and proposed bridges. The Russian River eventually empties into the Pacific Ocean approximately 10 miles west of the Project site.

The Project is within the jurisdiction of the North Coast Regional Water Quality Control Board (NCRWQCB). Waste discharge requirements are set by the regional water board for point sources, including industrial and commercial uses, community wastewater management systems and individual septic systems (County of Sonoma 2008). Water quality issues arise primarily from polluted runoff discharges, which can include pesticides, fertilizers, green waste, animal waste, human waste, petroleum hydrocarbons such as gasoline and motor oil, trash, and other constituents of concern. Stormwater flowing over roadways and other transportation assets carries urban pollutants through natural drainage systems or man-made storm drain structures to a body of surface water.

Water quality objectives are numeric and narrative objectives used to define the appropriate levels of environmental quality, to protect beneficial uses, and to manage activities that can impact aquatic environments. Narrative objectives provide a general description of water quality that must be attained, and numeric objectives provide a quantitative limitation on pollutant concentrations or levels, to protect beneficial uses of the water body. Both must be attained through pollution control measures, watershed management, restoration and other actions. The Basin Plan lists the following narrative and numeric water quality objectives for the region's surface waters: bacteria, biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pesticides, pH, radioactivity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity.

The most sensitive beneficial uses supported by the Russian River includes uses associated with the cold water fishery and municipal and domestic supply. Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning. The Basin Plan lists beneficial uses for the Russian River, Guerneville Hydrologic Sub-area (114.11), which is summarized in Table 4.10-1.

To address surface water quality impairments, the NCRWQCB prescribe total maximum daily loads (TMDL) to impaired water bodies in Sonoma County for pathogens, fecal indicator bacteria, sedimentation, temperature, and mercury (North Coast RWQCB 2020). The State Water Resources Control Board (SWRCB), in compliance with the Clean Water Act (CWA), Section 303(d), has prepared a list of impaired water bodies in the State of California. The 2014/2016 California Integrated Report (Clean Water Act Section 303[d] List / 305[b] Report) (SWRCB 2018) lists the Russian River Hydrologic Unit, Lower Russian River Hydrologic Area, Guerneville Hydrological Sub-area as pollutant impaired. The impaired pollutants are listed in Table 4.10-2.

Table 4.10-1 Beneficial Uses

| | Beneficial Uses | | | | | | | | | | | | | | | | | | | | | | |
|--|-----------------|-----|-----|-----|------|-----|------|------|------|------|------|------|-----|------|------|-----|------|------|-----|-----|-----|-----|-----|
| | MUN | AGR | IND | GWR | FRSH | NAV | REC1 | REC2 | COMM | WARM | COLD | ASBS | SAL | WILD | RARE | MAR | MIGR | SPWN | EST | CUL | FLD | WET | WQE |
| Guerneville Hydrological Sub-Area (114.11) | E | E | E | E | E | E | E | E | E | E | E | - | - | E | E | - | E | E | E | - | - | - | - |

Source: Basin Plan, 2018

Notes:

- IND – industrial service supply
- PROC – industrial process supply
- COMM – commercial and sports fishing
- SHELL – shellfish harvesting
- EST – estuarine habitat
- MIGR – fish migration
- RARE – preservation of rare and endangered species
- SPWN – fish spawning
- WILD – wildlife habitat
- REC-1 – water contact recreation
- REC-2 – non-contact water recreation
- NAV – navigation
- E – existing

Table 4.10-2 Russian River Waterbody Impairments

| Water Body | Pollutant | Potential Source | Estimated TMDL Completion Date |
|---|-------------------------|--|--------------------------------|
| Russian River Hydrologic Unit, Lower Russian River Hydrologic Area, Guerneville Hydrological Sub-area | Aluminum | Sources Unknown | 2025 |
| | Indicator Bacteria | Source Unknown | 2016 |
| | Sedimentation/Siltation | Flow Alteration/Regulation/Modification, Removal of Riparian Vegetation, Streambank Modification/Destabilization | 2025 |
| | Specific Conductivity | Source Unknown | 2025 |
| | Temperature, water | Flow Alteration/Regulation/Modification, Removal of Riparian Vegetation | 2019 |

Source: SWRCB 2018

Groundwater

Water quality in Sonoma County varies depending on the underlying groundwater basin. Factors that contribute to the decline of groundwater quality include percolation of agricultural runoff contaminated with fertilizers and pesticides into the water table; percolation of water from public and private sewage treatment systems; and percolation of contaminated urban runoff.

The Project lies within the Lower Russian River Valley Groundwater Basin (Basin No. 1-60). The Lower Russian River Valley Groundwater Basin covers 6,600 acres of Sonoma County and has a total storage capacity of 55,000 acres-feet (California Department of Water Resources 2003).

The Lower Russian River Valley basin, which underlies the Project site, has measured water quality impairments of primary and secondary inorganics as well as radiological constituents (DWR 2004a).

According to the Project's Preliminary Foundation Design Information Memo (Parikh, 2020), groundwater was observed in the river during drilling in September 2019. Groundwater may vary with the passage of time due to seasonal groundwater fluctuation and the proximity to creeks, surface and subsurface flow, ground surface run-off and other factors that may not be present at the time of the investigation. It is assumed that groundwater level is at elevation 5 feet for the Project design.

b. Water Supply

The Sweetwater Springs Water District (SSWD) serves the areas adjacent to the Project site. The District's water supply comes from wells near the Russian River and the distribution facilities consist of two separate water systems: one in Guerneville with three wells and the other in Monte Rio with two wells. The District's water distribution system is a result of water lines being installed over the last 100 years. Although the water system has been upgraded over the years, major upgrade construction projects have been taking place since SSWD acquired the water system. The Sweetwater Springs Water District serves approximately 3,600 accounts (95% residential) comprised of about 9,000 persons.

According to the Sonoma Water Agency, there are two major reservoir projects that provide the water supply for the Russian River watershed: Lake Mendocino on the East Fork of the Russian River and Lake Sonoma on Dry Creek. Lake Mendocino and Lake Sonoma are dual-purpose reservoirs, since they provide flood protection managed by the U.S. Army Corps of Engineers and Sonoma Water manages the water supply storage. The Basin Plan identifies the Russian River Hydrologic Unit as having the beneficial use of domestic supply.

Groundwater Recharge

During and after a storm event, rainfall may infiltrate into the ground surface, and move down through the soil as groundwater recharge. Land areas vary in their capacity to recharge based on soil conditions and the underlying geology. In Sonoma County, rivers and stream corridors are important sources for groundwater recharge, as are areas underlain by permeable geologic formations.

Groundwater generally occurs in geologic formations with high water-holding capacity (aquifers) on a local scale, and groundwater basins on a regional scale. Contiguous aquifers allow groundwater to migrate between them, and sometimes multiple aquifers occur, separated by less permeable or impermeable (clay) layers called aquacludes.

Groundwater is an important source of agricultural, industrial, and domestic water supply in the Project area. It is accessed through wells drilled into the zone of saturation. Recharge of groundwater typically occurs along the major streams and their principal tributaries. The principal water bearing formations in Sonoma County groundwater basins are typically alluvium, a deposit of clay, silt, sand, and gravel left by flowing streams in a river valley.

c. Hazards

Flooding and Dam Inundation

Flooding or inundation by water can occur because of storm events, dam failure, seiche, and tsunamis. Flooding is the most frequent natural hazard impacting Sonoma County, with most frequent flooding occurring along the Russian River. Figure 4.10-5 shows the 100-year floodplain at the project location based on the floodplain mapping by the Federal Emergency Management Agency (FEMA). As shown therein, the Project site is within the 100-year floodplain.

Inundation can result from dam failure, which refers to the breakdown, collapse, or other failure of a dam structure characterized by the uncontrolled release of impounded water. The most common cause of dam failure is prolonged rainfall that produces flooding, although other causes include natural events such as earthquakes or landslides and structural deterioration. In the event of dam failure, inundation could affect the Project site.

The Federal Emergency Management Agency's (FEMA) county-wide National Flood Hazard Layer and Flood Insurance Rate Map (FIRM) for Sonoma County and Incorporated Areas, Map Number 06097C0659E (effective since December 2, 2008), was used to obtain floodplain information within the Project area.

The existing bridge is located on the Bohemian Highway within the Zone AE floodplain. Zone AE regions are areas subject to inundation by the 1-percent-annual-chance flood event (100-year storm). Base flood elevations (BFE) are provided within these zones (See Figure 4.10-5). A floodway has been defined along this reach of the Russian River. FEMA defines a floodway as "the channel of a river or watercourse and adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a desired height. Communities must regulate development in these floodways to ensure that there are no increase in upstream flood elevations."

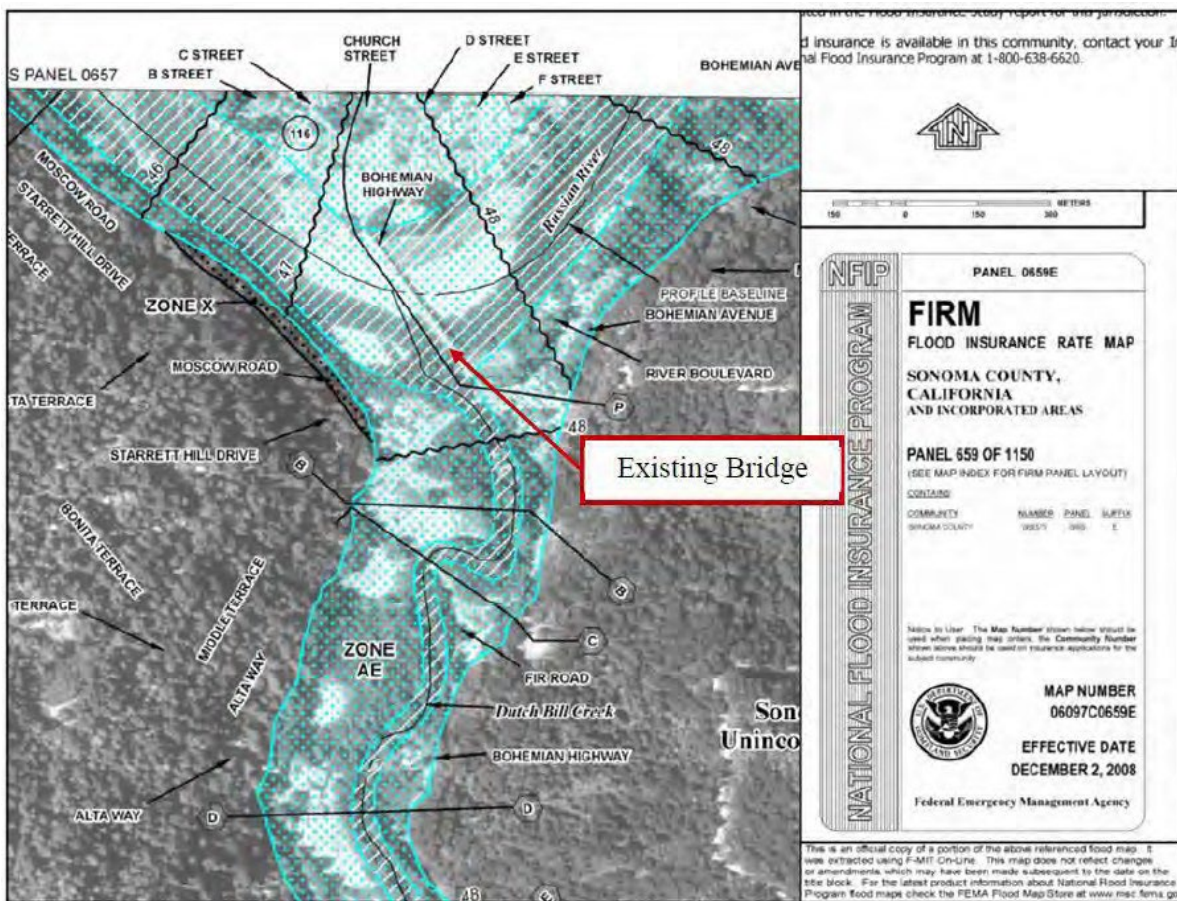
Currently the existing bridge would be overtopped during both 100 year and 50 year storm events. The bridge itself may contribute to increased water surface elevation during flood events. Removal of the bridge will reduce surface water elevations during flood events at the Project location. The replacement bridge is designed to be built to a height outside the 100 year flood elevation to the extent feasible, and will reduce the number of supports within the Russian River channel.

Tsunami and Seiche

Tsunamis are high sea waves that are caused by earthquake, submarine landslide, or other disturbances. The Pacific Ocean is approximately 10 miles west of the site, a distance far enough away that the Project area is not a designated tsunami inundation zone (California Department of Conservation 2020).

A seiche is a temporary disturbance or oscillation in water level of a lake or partially enclosed body of water, usually caused by changes in atmospheric pressure. There are no lakes or reservoirs within 0.5 mile of the Project site. While an earthquake could generate a seiche in these reservoirs releasing water into the Russian River, potential inundation would remain localized to low-lying areas along the perimeter of the reservoirs.

Figure 4.10-3 FEMA Floodplain Map



4.10.2 Regulatory Setting

a. Federal Regulations

Clean Water Act

Individual projects that disturb more than one acre are required to obtain NPDES coverage under the California General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit). The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) describing best management practices (BMP) the discharger would use to prevent and retain stormwater runoff. The SWPPP must contain a visual monitoring program; a chemical monitoring program for “non-visible” pollutants to be implemented if BMPs fail; and a sediment monitoring plan if the site discharges directly to a waterbody listed on the 303(d) list for sediment.

Section 401 of the CWA requires any activity that would result in discharge into waters of the U.S. be certified by the RWQCB. This certification ensures the proposed activity would not violate State and/or federal water quality standards. Section 404 of the CWA authorizes the U.S. Army Corps of Engineers to regulate the discharge of dredged or fill material to the waters of the U.S. and adjacent wetlands. Discharges to waters of the U.S. must be avoided where possible and minimized and mitigated where avoidance is not possible. Section 303(d) of the CWA requires states to establish TMDL programs for streams, lakes, and coastal waters that do not meet certain water quality standards.

Applicants of construction projects disturbing one or more acre of soil are required to file for coverage under the SWRCB, Order No. 99-08-DWQ, NPDES General Permit No. CAS000002 for Discharges of Storm Water Runoff Associated with Construction Activity (General Permit).

National Flood Insurance Act / Flood Disaster Protection Act

The National Flood Insurance Act of 1968 made flood insurance available for the first time. The Flood Disaster Protection Act of 1973 made the purchase of flood insurance mandatory for the protection of property located in Special Flood Hazard Areas. These laws are relevant because they led to mapping of regulatory floodplains and to local management of floodplain areas according to guidelines that include prohibiting or restricting development in flood hazard zones.

b. State Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1967 requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect State waters. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. The Water Quality Control Plan, or Basin Plan, protects designated beneficial uses of State waters through the issuance of waste discharge requirements and through the development of TMDLs. Anyone proposing to discharge waste that could affect the quality of the waters of the State must make a report of the waste discharge to the RWQCB or SWRCB as appropriate, in compliance with the Porter-Cologne Act.

Sustainable Groundwater Management Act

In September 2014, Governor Brown signed legislation requiring that California's critical groundwater resources be sustainably managed by local agencies. The Sustainable Groundwater Management Act gives local agencies the power to sustainably manage groundwater and requires Groundwater Sustainability Plans (GSP) to be developed for medium- and high-priority groundwater basins. While the Project area is supported by a groundwater basin, the area is not within a GSA.

Antidegradation Policy

California's antidegradation policy, formally known as the Statement of Policy with Respect to Maintaining High Quality Waters in California, restricts degradation of surface and ground waters. It protects waters where existing water quality is higher than necessary for the protection of beneficial uses. Any actions with the potential to adversely affect water quality must be consistent with the maximum benefit to the people of the State; not unreasonably affect present and anticipated beneficial use of the water; and not result in water quality less than prescribed in water quality plans and policies.

Cobey-Alquist Floodplain Management Act

The Cobey-Alquist Floodplain Management Act (Water Code Section 8400 et seq.) gives support to the National Flood Insurance Program by encouraging local governments to plan, adopt, and enforce land use regulations for floodplain management, to protect people and property from flooding hazards. The Act also identifies requirements that jurisdictions must meet to receive State financial assistance for flood control.

Urban Water Management Planning Act

In 1983, the California Legislature enacted the Urban Water Management Planning Act (Water Code, Section 10610 et seq.), which requires urban water suppliers to develop water management plans to actively pursue the efficient use of available supplies. This Act also requires the provision of water service to be affordable to lower income households (Section 10631.1). Every five years, water suppliers are required to develop Urban Water Management Plans (UWMP) to identify short-term and long-term water demand management measures to meet growing water demands. Sweetwater Springs Water District current UWMP was updated in June 2021.

State Water Conservation Requirements

Executive Order B-37-16 established a new water use efficiency framework for California. The order bolstered the state's drought resilience and preparedness by establishing longer-term water conservation measures that include permanent monthly water use reporting, new urban water use targets, reducing system leaks and eliminating clearly wasteful practices, strengthening urban drought contingency plans, and improving agricultural water management and drought plans. Based on monthly water use reporting, most urban water suppliers reported sufficient supplies to meet demand in three additional dry years and are not subject to state conservation mandates. On February 8, 2017, SWRCB adopted an emergency water conservation regulation to amend and extend the May 2016 regulation. The amended regulation allows certain suppliers the opportunity to submit or resubmit their water supply reliability assessments.

c. Regional and Local

Municipal Separate Storm Sewer System

RWQCBs issue stormwater discharge permits, with a Phase I Municipal Separate Storm Sewer System (MS4) (Order R1-2015-0030) applicable to sites in the North Coast Region RWQCB (County of Sonoma 2020). The County, City of Santa Rosa, and Sonoma Water implement the MS4 permit. The MS4 programs implement and enforce BMPs to reduce the discharge of pollutants from municipal separate storm sewer systems.

Low Impact Development Manual

The 2017 Storm Water Low Impact Development Technical Design Manual (LID Manual) provides technical guidance for project designs that require the implementation of permanent stormwater BMPs. This manual supersedes the 2005 Standard Urban Storm Water Mitigation Plan and satisfies Order R1-2015-0030, NPDES Permit CA0025054. While the City of Santa Rosa maintains the LID Manual, the County of Sonoma is a co-permittee along with the City and implements the LID Manual on projects in the unincorporated county (City of Santa Rosa 2017).

Sonoma County General Plan

The County General Plan was adopted by the Sonoma County Board of Supervisors Resolution 08-0808 on September 23, 2008. The County General Plan includes broad goals and policies aimed at protecting the county's water supply and water quality and protecting against flood hazards. Goals and policies from the County General Plan are provided below.

Goal WR-1: Protect, restore, and enhance the quality of surface and groundwater resources to meet the needs of all reasonable beneficial uses.

Objective WR-1.2: *Avoid pollution of stormwater, water bodies and groundwater.*

Policy WR-1c: Prioritize stormwater management measures in coordination with the RWQCB direction, focusing first upon watershed areas that are urbanizing and watersheds with impaired water bodies. Work cooperatively with the RWQCBs to manage the quality and quantity of stormwater runoff from new development and redevelopment in order to:

- (1) Prevent, to the maximum extent practicable, pollutants from reaching stormwater conveyance systems.
- (2) Ensure, to the maximum extent practicable, that discharges from regulated municipal storm drains comply with water quality objectives.
- (3) Limit, to the maximum extent practicable, stormwater from post development sites to pre-development quantities.
- (4) Conserve and protect natural areas to the maximum extent practicable.

Policy WR-1g: Minimize deposition and discharge of sediment, debris, waste and other pollutants into surface runoff, drainage systems, surface water bodies, and groundwater.

Policy WR-1h: Require grading plans to include measures to avoid soil erosion and consider upgrading requirements as needed to avoid sedimentation in stormwater to the maximum extent practicable.

Policy WR-1q: Require new development projects to evaluate and consider naturally occurring and human caused contaminants in groundwater.

Goal WR-2: Manage groundwater as a valuable and limited shared resource.

Objective WR-2.3: Encourage new groundwater recharge opportunities and protect existing groundwater recharge areas.

Objective WR-2.5: Avoid additional land subsidence caused by groundwater extraction.

Policy WR-2e: Require proof of groundwater with a sufficient yield and quality to support proposed uses in Class 3 and 4 water areas.¹ Require test wells or the establishment of

¹ Class 3 refers to a marginal groundwater area. Class 4 refers to low/highly variable water yield areas.

community water systems in Class 4 water areas. Test wells may be required in Class 3 areas. Deny discretionary applications in Class 3 and 4 areas unless a hydrogeologic report establishes that groundwater quality and quantity are adequate and will not be adversely impacted by the cumulative amount of development and uses allowed in the area, so that the proposed use will not cause or exacerbate an overdraft condition in a groundwater basin or subbasin. Procedures for proving adequate groundwater should consider groundwater overdraft, land subsidence, saltwater intrusion, and the expense of such study in relation to the water needs of the Project.

Goal WR-4: Increase the role of conservation and safe, beneficial reuse in meeting water supply needs of both urban and rural users.

Objective WR-4.1: Increase the use of recycled water where it meets all applicable regulatory standards and is the appropriate quality and quantity for the intended use.

Objective WR-4.2: Promote and encourage the efficient use of water by all water users.

Objective WR-4.3: Conserve and recognize stormwater as a valuable resource.

Policy WR-4b: Use water effectively and reduce water demand by developing programs to:

- (1) Increase water conserving design and equipment in new construction, including the use of design and technologies based on green building principles,
- (2) Educate water users on water conserving landscaping and other conservation measures,
- (3) Encourage retrofitting with water conserving devices,
- (4) Design wastewater collection systems to minimize inflow and infiltration, and
- (5) Reduce impervious surfaces to minimize runoff and increase groundwater recharge.

Policy WR-4e: Require water conserving plumbing and water conserving landscaping in all new development projects and require water conserving plumbing in all new dwellings. Promote programs to minimize water loss and waste by public water suppliers and their customers. Require County operated water systems to minimize water loss and waste.

Policy WR-4g: Require that development and redevelopment projects, where feasible, retain stormwater for on-site use that offsets the use of other water.

Goal PS-2: Reduce existing flood hazards and prevent unnecessary exposure of people and property to risks of damage or injury from flood hazards.

Objective PS-2.2: Regulate new development to reduce the risks of damage and injury from known flooding hazards to acceptable levels.

Policy PS-2e: Expand the County's zero net fill requirements to address all areas of the unincorporated County that are located within the 100-year FEMA special flood hazard area.

Policy PS-2f: Preserve floodplain storage capacity by avoiding fill in areas outside of the 100-year FEMA special flood hazard area that retain or could retain flood waters.

Policy PS-2m: Regulate development, water diversion, vegetation management, grading, and fills to minimize any increase in flooding and related damage to people and property.

Policy PS-2o: Costs for drainage facilities to handle the surface runoff from new development shall be the responsibility of the new development.

Policy PS-2p: Require that design and construction of drainage facilities be subject to the review and approval of the Permit and Resource Management Department.

Water Quality Control Plans

The NCRWQCB completed a Water Quality Control Plan (WQCP) for the North Coast Region in June 2018 (North Coast RWQCB 2018). This plan applies to the Project site. WQCPs identify the beneficial uses for water bodies within the respective regions and provides implementation actions and strategies to achieve the water quality objectives set forth in the WQCPs.

4.10.3 Impact Analysis

a. Methodology and Thresholds of Significance

Methodology

This section describes the potential environmental impacts of the Project relevant to hydrology and water quality. The impact analysis is based on an assessment of baseline conditions for the Project site, including surface water, groundwater, and floodplains, as described above under Section 4.10.1, *Environmental Setting*. This analysis identifies potential impacts based on the predicted interaction between the affected environment and construction, operation, and maintenance activities related to the Project, and recommends mitigation measures, when necessary, to avoid or minimize impacts.

Significance Thresholds

The following thresholds of significance are based on Appendix G to the *CEQA Guidelines*. For the purposes of this Project EIR, project implementation may have a significant adverse impact if it would:

- 1 Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality
- 2 Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin
- 3 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would
 - a. Result in substantial erosion or siltation on- or off-site
 - b. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site
 - c. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff
 - d. Impede or redirect flood flows
- 4 In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation
- 5 Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan

b. Project Impacts and Mitigation Measures

| |
|---|
| Threshold: Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? |
|---|

Impact HWQ-1 THE PROJECT WOULD NOT VIOLATE WATER QUALITY STANDARDS OR WASTE DISCHARGE REQUIREMENTS, OR OTHERWISE SUBSTANTIALLY DEGRADE SURFACE OR GROUNDWATER QUALITY. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

Construction

Construction activities associated with the Project would include installation and realignment of utilities, demolition of the existing bridge, and the replacement and/or improvement of drainage facilities. Construction activities could result in soil erosion due to earth-moving activities such as excavation, grading, placement of gravel works pad in the flowing water, soil compaction and moving, and soil stockpiling. Runoff during storm events typically occurs as sheet flow across a site. The types of pollutants contained in runoff from construction sites may include sediment and other existing contaminants such as nutrients, pesticides, herbicides, trace metals, and hydrocarbons that can attach to sediment and be transported downstream through erosion via overland flow, ultimately entering waterways and contributing to degradation of water quality.

Construction activities will utilize hazardous materials such as diesel fuel, gasoline, lubricant oils, hydraulic fluid, antifreeze, transmission fluid, cement slurry, and other fluids required for the operation of construction vehicles or equipment. These types of hazardous materials are not acutely hazardous, and all storage, handling, use, and disposal of these materials are regulated by county, state, and federal regulations and compliance with applicable standards discussed in Section 4.9, *Hazards and Hazardous Materials*.

The Project will be required to comply with State and local water quality regulations designed to control erosion and protect water quality during construction. This includes compliance with the requirements of the SWRCB Construction General Permit, which requires preparation and implementation of a SWPPP for projects that disturb one acre or more of land. The SWPPP must include erosion and sediment control BMPs that would meet or exceed measures required by the Construction General Permit. Construction BMPs could include inlet protection, silt fencing, fiber rolls, stabilized construction entrances, stockpile management, solid waste management, and concrete waste management. Post-construction stormwater performance standards are also required to specifically address water quality and channel protection events. Implementation of the required SWPPP would reduce the potential for eroded soil and any contaminants attached to that soil to contaminate a waterbody following a storm event.

Compliance with the regulations and policies discussed in section 4.10.2 would reduce the risk of water degradation from soil erosion and other pollutants related to construction activities. Additionally Mitigation Measures for the Project, including BIO-1 (General Conditions), BIO-2 (Erosion and Sediment Control), BIO-4 (Accidental Spill and Pollution Prevention), BIO-4 (Riparian Habitat Replacement), and BIO-11 (Waters of the US/ Waters of the State) will limit impacts to water quality from construction activities to be less than significant.

Operation

The Project would result in a small net increase of impervious surface due to increased bridge width and incorporation of pedestrian and bicycle facilities on the new structure. A NPDES Construction General Permit is required, including the development of a SWPPP, as described in detail above. SWPPP implementation would reduce the risk of water degradation on site and off site from runoff, soil erosion and other pollutants related to project operation because a SWPPP requires the design, installation, and maintenance of post-construction stormwater controls.

The Project would be subject to the requirements of the 2015 Phase I Municipal Storm Sewer Systems (MS4) Permit issued by the North Coast Regional Water Quality Control Board or to the requirements of a subsequently issued MS4 permit. This MS4 permit requires Low Impact Development (LID), which, for this Project, entails stormwater capture (to not increase runoff rates), and treatment of stormwater runoff from paved areas. The replacement bridge deck would drain via deck drains that outlet to the storm drain and/or storm water treatment system at the ends of the bridge. Sidewalks may be drained directly onto the roadway or may have separate drain inlets. Post-construction Storm Water Best Management Practices (BMPs) would be implemented to achieve any required permanent water quality treatment and volume capture of the Project area. It is anticipated that stormwater treatment basins, above ground, of approximately 100 square feet by two- to three-feet in depth would be required near each replacement bridge abutment.

Implementation of the regulations, permit requirements, BMPs, and policies described above would prevent or minimize impacts related to water quality and ensure the Project would not cause or contribute to the degradation of water quality in receiving waters. The Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality, and water quality impacts would be less than significant.

Mitigation Measures

BIO-1 (General Conditions), BIO-2 (Erosion and Sediment Control), BIO-4 (Accidental Spill and Pollution Prevention), BIO-4 (Riparian Habitat Replacement), and BIO-11 (Waters of the US/ Waters of the State)

Significance After Mitigation

Impacts would be less than significant with mitigation.

Threshold: Would the Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?

Impact HWQ-2 THE PROJECT WOULD NOT INTERFERE SUBSTANTIALLY WITH GROUNDWATER RECHARGE OR DECREASE GROUNDWATER SUPPLIES SUCH THAT THE PROJECT MAY IMPEDE SUSTAINABLE GROUNDWATER MANAGEMENT OF LOCAL GROUNDWATER BASINS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The proposed Project would involve minimal use of water during and following construction, including for dust control and for watering plants during the revegetation maintenance periods. The small amount of additional impervious surfaces for the new bridge approaches would not substantially interfere with groundwater recharge. The Project would not increase the demand for water, most of which is derived from groundwater sources in the Project area. Impact HWQ-3 focuses on physical interference associated with impervious surfaces.

Based on the small disturbance and revegetation areas, the amount of water use would not substantially deplete groundwater supplies.

The Project would be required to comply with the Santa Rosa LID Manual, which requires the implementation of permanent stormwater BMPs for projects that create or replace 10,000 square feet or more of impervious surfaces. These BMPs would encourage groundwater recharge through the construction of stormwater capture basins, which would percolate captured surface water into the soil on site. These features do not exist under existing conditions, so the Project would have a

beneficial impact in this case. Compliance with existing requirements would ensure that impacts to groundwater supplies would be less than significant.

Construction of the bridge Project will require subsurface support and foundations. Although the construction of support and foundations for structure could contact groundwater, the displaced volume would not be substantial relative to the storage volume of the underlying groundwater basins.

If required, dewatering activities required for construction of the piers could also remove groundwater, but the volume of water removed would not be substantial relative to groundwater pumping for water supply. Dewatering would be temporary, and groundwater levels would recover following construction. Water used during construction for cleaning, dust control, and other uses would be nominal. Thus, construction activities would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge.

The project would not interfere substantially with groundwater recharge. Therefore, groundwater impacts would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

| | |
|-------------------|---|
| Threshold: | <p>Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?</p> <p>Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?</p> <p>Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?</p> |
|-------------------|---|

Impact HWQ-3 THE PROJECT WOULD ALTER DRAINAGE PATTERNS AND INCREASE RUNOFF AT THE PROJECT SITE, BUT WOULD NOT RESULT IN SUBSTANTIAL EROSION OR SILTATION ON OR OFF SITE, RESULT IN INCREASED FLOODING ON OR OFF SITE, EXCEED THE CAPACITY OF EXISTING OR PLANNED STORMWATER

DRAINAGE SYSTEMS, OR GENERATE SUBSTANTIAL ADDITIONAL POLLUTED RUNOFF. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Construction

Construction activities would involve stockpiling, grading, excavation, paving, and other earth-disturbing activities that could temporarily alter existing drainage patterns. As described under Impact HWQ-1 above, compliance with SWRCB's NPDES Construction General Permit and NPDES MS4 General Permits, would reduce the risk of short-term erosion and increased runoff resulting from drainage alterations during construction.

Prior to leaving the site, the contractor will be required to smooth and regrade disturbed areas to match preconstruction conditions. The southern approach roadway will extend east and west along Main Street and would conform to match existing grade elevations within approximately 150 feet of the new bridge. On the northern approach roadway, improvements would extend east along Bohemian Highway north of the Rio Theater, west into the MRRPD Community Center parking lot entrance, and north along Bohemian Highway toward SR 116. Approach work on the north approach roadway would conform to grade within approximately 300 feet of the end of the new bridge. Embankment fill would be used to raise the roadway and reduce the existing sag and improve drainage at that location. Impacts to drainage would therefore be less than significant.

Operation

The Project would alter the existing drainage patterns at the site through introduction of new impervious surfaces. The replacement bridge will be both longer and wider than the existing structure, but removal of the existing bridge will offset the total increases of impervious surfaces at the site. New impervious surfaces could increase the rate and/or amount of surface runoff, redirect runoff to different discharge locations, or concentrate runoff from sheet flow to channelized flow. Surface water runoff rate and amount is determined by multiple factors, including the amount and intensity of precipitation, amount of other imported water that enters a watershed, and amount of precipitation and imported water that infiltrates to the groundwater. Infiltration is also determined by several factors, including soil type, antecedent soil moisture, rainfall intensity, the amount of impervious surface in a watershed, and topography. The rate of surface runoff is largely determined by surrounding topography.

Impact HWQ-1 and 2 above discusses applicable regulations to be complied with that would limit pollutant discharges, including sediment and silt, from the Project. As discussed above, implementation of LID Manual BMPs to control stormwater runoff from the Project site are designed to reduce or eliminate stormwater pollutants from entering the Russian River. The Project is required to comply with the applicable MS4 General Permit and LID Manual. Additionally, the Project improvements would be required to comply with the NPDES Construction General Permit, with greater than one acre in size in disturbance will require the development of a SWPPP, as described in detail above.

The Sonoma County General Plan includes goals and policies that are intended to reduce flood hazards through minimal alterations to designated floodplains, which would reduce the potential for increased susceptibility to flooding on or offsite. Implementation of these goals and policies would ensure that the runoff from the Project does not exceed the capacity of existing and future storm drain systems. Impacts would be less than significant.

The Project would not alter the existing drainage patterns or contribute runoff water in a manner which would result in substantial erosion, siltation, or flooding, nor would it exceed the capacity of existing or planned stormwater drainage systems. Impacts would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold: Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?

Impact HWQ-4 THE PROJECT WOULD ALTER DRAINAGE PATTERNS ON AND MAY INCREASE RUNOFF FROM THE PROJECT SITE. THE PROJECT IS WITHIN AN AREA AT RISK FROM INUNDATION BY FLOOD HAZARD; REQUIRED COMPLIANCE WITH APPLICABLE GENERAL PLAN GOALS AND POLICIES ENSURES IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The replacement Bridge will be larger than the existing structure to meet current AASHTO design standards, and provide a multimodal route for vehicles, bicycles, and pedestrians. The Bridge alignment will be constructed slightly downstream of the existing bridge. This will cause minor modification to drainage patterns and increase runoff due impervious surface of the bridge deck. These alterations to the drainage patterns and increased impervious surface at the site are anticipated to be less than significant.

As stated in Section 4.10.1, *Environmental Setting*, the Project Site occurs within a 100-year flood hazard area. The proposed bridge profile would be raised to meet the 100-year flood level of 47.7 feet, with an ADA-compliant longitudinal grade to accommodate the pedestrians crossing the bridge. The proposed structure would not entirely clear the estimated 100-year flood water levels due to relatively low elevations of the approach roadways and limitations on how much they can be raised; however preliminary analysis indicates that the proposed structure would be a substantial improvement from the existing structure, in which the existing structure is completely overtopped by flood waters, to a condition with the proposed bridge in which less than 100 feet of the replacement bridge superstructure at the approaches would become overtopped.

The Project is required to comply with General Plan policies that aim to achieve General Plan Goal PS-2. Therefore, increased flooding on adjacent parcels to the Project site are not anticipated to occur because of the Project. Impacts would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold: In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

Impact HWQ-5 THE PROJECT SITE IS WITHIN A FLOOD HAZARD ZONE, BUT NOT WITHIN AN AREA AT RISK FROM INUNDATION BY SEICHE OR TSUNAMI. THE PROJECT WOULD NOT BE AT RISK OF RELEASE OF POLLUTANTS DUE TO PROJECT INUNDATION. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The Project would be subject to County requirements for stormwater quality runoff from the Project Site (refer to Impact HWQ-1). The Project will result in a bridge with a raised elevation compared to the existing structure to reduce structure inundation during high flood events to greatest extent feasible. Therefore, the Project would not increase the risk of releasing pollutants due to flood inundation compared with existing conditions.

As stated in Section 4.10.1, *Environmental Setting*, the Project site is not located in a tsunami or seiche zone. Therefore, the Project would not risk release of pollutants due to tsunami or seiche inundation of the Site. Impacts related to flood flows and Project inundation would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold: Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Impact HWQ-6 THE PROJECT WOULD COMPLY WITH ADOPTED WATER QUALITY CONTROL PLANS AND SUSTAINABLE GROUNDWATER MANAGEMENT PLANS APPLICABLE TO THE SITE. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATIONS INCORPORATED.

Water Quality Control Plan

The North Coast RWQCB's Water Quality Control Plan (WQCP) applies to the site. The WQCPs identify beneficial uses for surface water and groundwater and establish water quality objectives to attain those beneficial uses. The identified beneficial uses and the water quality objectives to maintain or achieve those uses are together known as water quality standards. As discussed in detail under Impact HWQ-1, compliance with relevant water quality regulations, BMPs, and policies would reduce the risk of water degradation from soil erosion and other pollutants related to Project construction and operation of the bridge. These requirements would ensure that the Project does not contribute or exacerbate identified water quality contamination in the applicable WQCP.

Construction of the Project requires in channel work which has the potential for temporary adverse impacts to water quality. As discussed above, the Project will be required to comply with State and Local regulations (refer to Impact HWQ-1) that will ensure compliance with waste discharge requirements. Mitigation Measures for the Project, including BIO-1 (General Conditions), BIO-2 (Erosion and Sediment Control), BIO-4 (Accidental Spill and Pollution Prevention), BIO-4 (Riparian Habitat Replacement), and BIO-11 (Waters of the US/ Waters of the State) will limit impacts

associated with Consequently, the Project would not conflict with or obstruct implementation of the WQCPs, and impacts would be less than significant with Mitigations.

Sustainable Groundwater Management Plan

The Project would not increase the demand for water. The Project area is supported by a ground water basin that is not currently part of a GSA. Therefore, development facilitated by the Project would not interfere with sustainable groundwater management planning efforts. Impacts related to sustainable groundwater management would be less than significant with mitigation.

Mitigation Measures

BIO-1 (General Conditions), BIO-2 (Erosion and Sediment Control), BIO-4 (Accidental Spill and Pollution Prevention), BIO-4 (Riparian Habitat Replacement), and BIO-11 (Waters of the US/ Waters of the State)

Significance After Mitigation

Impacts would be less than significant with mitigation.

4.10.4 Cumulative Impacts

A project's environmental impacts are "cumulatively considerable" if the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (*CEQA Guidelines* Section 15065[a][3]). The geographic scope for cumulative hydrology and water quality impacts is the watershed and groundwater basin where the Project is located. This geographic scope is appropriate for hydrology and water quality because water quality impacts are localized in the watershed where the impact occurs.

The Project would generally increase impermeable surface area in the applicable watershed. Increased impermeable surface area would potentially increase peak flood flows, alter drainage patterns, reduce groundwater recharge, and increase pollutants in the regional stormwater. However, the Project would be required to adhere to all applicable State and local regulations designed to control erosion and protect water quality, including the Sonoma County Code, NPDES Construction General Permit, MS4 General Permits, and Sonoma County General Plan policies. All construction sites larger than one acre in size would be required to prepare and submit a SWPPP, thereby reducing the risk of water degradation on and off site from soil erosion and other pollutants.

As discussed above under Impacts HWQ-1 and HWQ-3, the Project would result in minor increase of impervious surface areas and alter drainage patterns due to the downstream alignment. However, compliance with relevant water quality regulations, BMPs, and policies would reduce the risk of water degradation from soil erosion and other pollutants related to construction and operational activities. With implementation of mitigation measures, construction and operation of the Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality. In addition, as discussed under Impact HWQ-2, construction of the Project would require minimal water use. The Project's water quality and groundwater recharge impacts would be less than significant. The Project would comply with NPDES, MS4, and County requirements related to stormwater runoff and water quality. Consequently, the Project would not contribute to cumulative impacts to peak runoff, flooding, groundwater recharge, or water quality.

Therefore, the Project would not have a cumulatively considerable contribution to a significant cumulative impact related to water quality.

As discussed under Impacts HWQ-2 and HWQ-6, the Project would not increase the demand for water, most of which would be derived from groundwater sources within the Project area. The replacement of an existing bridge will not in itself increase the likelihood of future development. Therefore, the Project would not result in a significant cumulative impact. The Project's impacts to groundwater supplies and groundwater management efforts would be less than significant and the Project would not have a cumulative considerable contribution to a significant cumulative impact related to groundwater.

As discussed under Impacts HWQ-4 and HWQ-5, most of the Project site is within a 100-year flood hazard area, but not within a zone at risk of inundation by tsunami or seiche. The Project would not be at risk of releasing pollutants due to inundation compared to existing site conditions. The Project would be required to comply with General Plan policies that aim to achieve General Plan Goal PS-2. Cumulative impact related to flooding, seiche, and tsunami would therefore be less than significant. The proposed bridge profile would be raised to meet the 100-year flood level, a substantial improvement from the existing structure. The Project would not impede or redirect flood flows or risk release of pollutants due to inundation compared to baseline conditions. Impacts from the Project related to flood flows and Project inundation would be less than significant. Because flooding is localized and site-specific, the Project would not have a cumulatively considerable contribution to a significant cumulative impact related to flood hazard or inundation risks.

This page intentionally left blank.

Land Use and Planning Table of Contents

| | | |
|--------|-----------------------------|---------|
| 4.11 | Land Use and Planning | 4.11-2 |
| 4.11.1 | Setting..... | 4.11-2 |
| 4.11.2 | Regulatory Setting | 4.11-3 |
| 4.11.3 | Impact Analysis | 4.11-13 |
| 4.11.4 | Cumulative Impacts | 4.11-15 |

Figures

| | | |
|---------------|-----------------------|--------|
| Figure 4.11-1 | Existing Zoning | 4.11-2 |
|---------------|-----------------------|--------|

4.11.2 Regulatory Setting

a. State Regulations

Local Agency Formation Commissions

The Cortese-Knox-Hertzberg Local Government Reorganization Act (Cortese-Knox-Hertzberg Act) of 2000 (Government Code Section 56000 et seq.) establishes the process through which local agency boundaries are established and revised. Each county must have a Local Agency Formation Commission (LAFCO), which is the agency that has the responsibility to create orderly local government boundaries, with the goal of encouraging "planned, well-ordered, efficient urban development patterns," the preservation of open-space lands, and the discouragement of urban sprawl. While LAFCOs have no land use power, their actions determine which local government will be responsible for planning new areas. LAFCOs address a wide range of boundary actions, including the creation and modifications of spheres of influence for cities and special districts, annexations, reorganizations, incorporations, and the detachment of areas from special districts. A city's or special district's sphere of influence is an indication of an agency's future growth boundaries.

Planning and Zoning Law

State law requires each city and county in California to adopt a general plan for the physical development of the land within its planning area (Government Code Sections 65300-65404). The general plan must contain land use, housing, circulation, open space, conservation, noise, and safety elements, as well as any other elements that the city or county may wish to adopt. The circulation element of a local general plan must be correlated with the land use element.

Zoning authority originates from city and county police power and from the State's Planning and Zoning Law, which sets minimum requirements for local zoning ordinances. The city or county zoning code is the set of detailed requirements that implement the general plan policies at the level of the individual parcel. The zoning code presents standards for different uses and identifies which uses are allowed in the various zoning districts of the jurisdiction. Since 1971, State law has required the city or county zoning code to be consistent with the jurisdiction's general plan.

Sustainable Communities and Climate Protection Act (SB 375)

The Sustainable Communities and Climate Protection Act (SB 375) supports the State's climate goals by helping reduce greenhouse gas emissions through coordinated transportation, housing, and land use planning. Under the Act, the California Air Resources Board (CARB) set greenhouse gas emissions targets for 2020 and 2035 for each of the 18 metropolitan planning organization regions in 2010 and updated them in 2018. Each of the regions must prepare a Sustainable Communities Strategy (SCS), as an integral part of its regional transportation plan that contains land use, housing, and transportation strategies that, if implemented, would allow the region to meet CARB's targets. The Act establishes some incentives to encourage implementation of the development patterns and strategies included in an SCS. Developers can get relief from certain environmental review requirements under the California Environmental Quality Act (CEQA) if their new residential and mixed-use projects are consistent with a regions SCS that meets the targets (see Public Resources Code Sections 21155, 21155.1, 21155.2, 21159.28.).

b. Regional Regulations

Association of Bay Area Governments (ABAG)/Metropolitan Transportation Commission (MTC) developed the Plan Bay Area 2050, adopted in October 2021. Plan Bay Area 2050 lays out a \$1.4 trillion vision for policies and investments to help all residents of the Bay Area’s nine counties — Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano and Sonoma. The heart of Plan Bay Area 2050 is 35 strategies across the four key elements of housing, the economy, transportation and the environment. These strategies are public policies or investments that can be implemented in the Bay Area at the city, county, regional or state level. Equity is interwoven into each strategy, from housing strategies that would produce more than one million new permanently affordable homes by 2050 to transit-fare reforms that would reduce cost burdens for riders with low incomes. Strategies are also crafted to be resilient to future uncertainties, including protections against climate hazards like sea level rise and wildfires, and with paths to economic mobility through job training and a universal basic income (ABAG 2021).

c. Local Regulations

Sonoma County General Plan

The current County General Plan was adopted by the Sonoma County Board of Supervisors Resolution 08-0808 on September 23, 2008. The County General Plan includes broad goals and policies aimed at promoting a mix of land uses and a balance of jobs; encouraging development that helps the County achieve a target jobs/housing ratio; encouraging regional commercial and visitor-serving commercial development that would enhance the identity of the county and attract visitors; providing for a variety of housing that complements the employment opportunities in the community; and encouraging consolidation of under-performing and under-utilized properties. Goals and policies from the County General Plan are provided below.

The General Plan designates Urban Service Areas within the County, which include the geographical area within the Urban Service Boundary that is designated for urban development. Urban Service Boundaries are the designated limit to the urban development of the cities and unincorporated communities of the County.

Land Use Element

Land Use Element goals and policies aim to accommodate future growth in the region, provide employment opportunities, emphasize development in Urban Service Areas, provide sufficient higher density housing opportunities, encourage infill development, maintain adequate public services, reduce exposure to unnecessary hazards, protect agricultural production lands, and coordinate with cities when applicable.

Goal LU-1: Accommodate Sonoma County's fair share of future growth in the San Francisco Bay Area region in a manner consistent with environmental constraints, maintenance of the high quality of life enjoyed by existing residents, and the capacities of public facilities and services.

Achieve a desirable balance between job opportunities and population growth.

Objective LU-1.1: Correlate development authorized by the Land Use Plan with projected population and employment growth as shown on Tables LU-2 and LU-5. Provide an adequate but not excessive supply of residential, commercial and industrial lands to accommodate this projected growth, taking into account projected city annexations.

Objective LU-1.3: Designate lands within the various land use categories to make available residential and employment opportunities and to achieve a balance between job opportunities and population growth countywide, subject to any constraints of environmental suitability, protection of agriculture and other resource protection, and availability of public services.

Policy LU-1a: This plan has relied extensively upon policies and designations set forth in previous Specific Plans and Area Plans. The County shall continue to use the following selected Specific Plans and Area Plans to implement this plan. A Specific or Area Plan may establish more detailed policies affecting proposed development but may not include policies that are in conflict with the General Plan. In any case where there appears to be a conflict between the General Plan and any Specific or Area Plan, the more restrictive policy or standard shall apply.

- (1) Airport/Industrial Specific Plan
- (2) South Santa Rosa Area Plan
- (3) Bennett Valley Area Plan
- (4) Sonoma Mountain Area Plan
- (5) West Petaluma Area Plan
- (6) Petaluma Dairy Belt Area Plan
- (7) Penngrove Area Plan
- (8) Franz Valley Area Plan

The following plans shall be repealed, but development guidelines contained therein shall be reviewed and updated and considered for adoption as "Local Area Development Guidelines," provided that they are consistent with the General Plan. Until such a time that these guidelines are adopted, any policies contained in these plans shall continue to apply provided they are consistent with the General Plan:

- (1) North Santa Rosa Plan
- (2) West Santa Rosa Plan
- (3) North Sonoma Valley Plan
- (4) South Sonoma Areas I and II
- (5) Lower River Plan
- (6) Hessel Plan
- (7) Russian River Plan
- (8) West Sebastopol Plan

The Sonoma County Local Coastal Plan is the policy document that guides land use and development in the Coastal Zone. The Local Coastal Plan is intended to be a standalone policy document that integrates the appropriate General Plan goals, objectives, and policies with those necessary to comply with the California Coastal Act.

Policy LU-1h: Evaluate Land Use Plan amendments subject to:

- (1) constraints of environmental suitability,
- (2) protection of agriculture,
- (3) availability of public services,
- (4) the County projected population and employment levels,
- (5) the need for workforce housing, and
- (6) other plan goals, objectives, and policies.

Goal LU-2: Accommodate the major share of future growth within the nine existing cities and their expansion areas and within selected unincorporated communities, which are planned to have adequate water and sewer capacities.

Objective LU-2.2: Allocate the largest portion of unincorporated area growth to communities with public sewer and water services.

Objective LU-2.3: Limit the amount of population growth and development in rural portions of the County outside of the cities and the unincorporated communities.

Objective LU-2.4: Coordinate with the cities and neighboring counties to maximize cooperative planning and implementation of the General Plan.

Objective LU-2.5: Provide sufficient opportunities for higher density housing within the Urban Service Areas to accommodate the population growth quantified in the Housing Element Objectives for lower and moderate income units.

Policy LU-2a: Maintain a residential holding capacity that is as close as possible to projected growth. Consider denial of Land Use Map amendments that add residential density in rural areas if residential holding capacity exceeds projected growth, recognizing that future development may not always use 100% of the capacity of all parcels.

Policy LU-2c: Encourage the retention and production of diverse types of housing within Urban Service Areas in order to provide adequate housing choices for current and future residents.

Policy LU-2d: Inventory, conserve and increase the amount and type of housing that accommodates those with special housing needs. Populations needing special types of housing include farm employees, the terminally ill, mentally disabled, handicapped people, abused spouses and children, and the homeless.

Goal LU-3: Locate future growth within the cities and unincorporated Urban Service Areas in a compact manner using vacant "infill" parcels and lands next to existing development at the edge of these areas.

Objective LU-3.2: Provide enough land for the expansion of cities and unincorporated Urban Service Areas to accommodate, but not substantially exceed, the projected urban growth. Lands planned for urban development in each planning area are shown on the Land Use Maps.

Objective LU-3.3: Encourage "infill" development within the expansion areas of the cities and unincorporated communities.

Policy LU-3b: In designated Urban Service Areas, maintain a residential holding capacity that is as close as possible to projected growth. Consider denial of Land Use Map amendments that add residential density if residential holding capacity exceeds projected growth, recognizing that future development may not use 100% of the capacity of all parcels.

Policy LU-3c: Avoid urban sprawl by limiting extension of sewer or water services outside of designated Urban Service Areas pursuant to the policies of the Public Facilities and Services Element.

Goal LU-4: Maintain adequate public services in both rural and Urban Service Areas to accommodate projected growth. Authorize additional development only when it is clear that a funding plan or mechanism is in place to provide needed services in a timely manner.

Objective LU-4.1: Assure that development occurs only where physical public services and infrastructure, including school and park facilities, public safety, access and response times, water and wastewater management systems, drainage, and roads are planned to be available in time to serve the projected development.

Policy LU-4a: If necessary, use zoning to assure that development shall occur only if public services are adequate or improvements are made to maintain an acceptable level of service. One such method could involve the use of "dual zoning" which would specify zoning with services and zoning without services.

GOAL LU-5: Identify important open space areas between and around the county's cities and communities. Maintain them in a largely open or natural character with low intensities of development.

Objective LU-5.1: Retain low intensities of use in Community Separators between and around cities and communities as designated in the Open Space and Resource Conservation Element.

Policy LU-5e: Avoid amendments to increase residential density in Community Separators, since these densities were established based upon the policies set forth in other elements of this plan as well as the open space, separation, and visual considerations identified in this section. The integrity of Community Separators cannot be maintained at densities in excess of one unit per ten acres. However, under no circumstances shall this policy be used to justify an increase in density from that designated on the Land Use Map.

Goal LU-7: Prevent unnecessary exposure of people and property to environmental risks and hazards. Limit development on lands that are especially vulnerable or sensitive to environmental damage.

Objective LU-7.1: Restrict development in areas that are constrained by the natural limitations of the land, including but not limited to, flood, fire, geologic hazards, groundwater availability and septic suitability.

Policy LU-7a: Avoid General Plan amendments that would allow additional development in flood plains, unless such development is of low intensity and does not include large permanent structures.

Policy LU-7b: Limit development in wetlands designated on Figure OSRC-3 of the Open Space and Resource Conservation Element.

Policy LU-7c: Prohibit new permanent structures within any floodway. Require that any development that may be permitted within the flood plain to be raised above the 100-year flood elevation.

Policy LU-7d: Avoid new commercial, industrial, and residential land use designations in areas subject to "high" or "very high" fire hazards, as identified in the Public Safety Element, unless the combination of fuel load, access, water supply, and other project design measures will reduce the potential fire related impacts of new development to insignificant levels.

Goal LU-9: Protect lands currently in agricultural production and lands with soils and other characteristics that make them potentially suitable for agricultural use. Retain large parcel sizes and avoid incompatible non-agricultural uses.

Objective LU-9.1: Avoid conversion of lands currently used for agricultural production to non-agricultural use.

Objective LU-9.2: Retain large parcels in agricultural production areas and avoid new parcels less than 20 acres in the "Land Intensive Agriculture" category.

Objective LU-9.3: Agricultural lands not currently used for farming but which have soils or other characteristics that make them suitable for farming shall not be developed in a way that would preclude future agricultural use.

Objective LU-9.4: Discourage uses in agricultural areas that are not compatible with long term agricultural production.

Policy LU-9c: Use rezonings, easements and other methods to ensure that development on agricultural lands does not exceed the permitted density except where allowed by the policies of the Agricultural Resources Element.

Objective LU-19.1: Avoid extension of Petaluma's Urban Service Boundary and limit urban residential development to the Urban Service Area when annexed by the City.

Policy LU-19a: Use zoning to avoid new urban uses within the Petaluma Urban Service Area prior to annexation by Petaluma.

Policy LU-19b: Refer to the City of Petaluma for review and comment any application for discretionary projects within one mile of the Urban Service Boundary.

Objective LU-20.1: Seek to jointly coordinate and monitor development within the City of Sonoma and the unincorporated Urban Service Area. Discourage urban development within Sonoma's Urban Service Boundary until annexation by the city (excluding parcels within the Sonoma Valley Redevelopment Area).

Policy LU-20a: Avoid urban residential and commercial development within Sonoma's Urban Growth Boundary until annexed by the City.

Policy LU-20b: In general, encourage annexation by the city prior to urban development on parcels that are within the Sonoma Valley Sanitation District and within the city's primary Sphere of Influence. Require annexation for urban residential development in this area. Parcels within the Sonoma Valley Redevelopment Area are exempt from these policies.

Policy LU-20c: Establish procedures for joint city/county review of major projects within the City and the County. Continue to utilize the Sonoma Valley Citizen's Advisory Commission as an advisory body to the two jurisdictions for this purpose.

Policy LU-20gg: Land use for the Glen Ellen area, including residential densities, shall correspond with the General Plan Land Use Element for Sonoma Valley. New development in Glen Ellen shall be evaluated in the context of the following:

- (1) the relationship between growth and traffic congestion,
- (2) the boundaries and extent of Urban Service Areas,
- (3) the amount and location of recreation and visitor-serving commercial uses,
- (4) the need to upgrade existing structures and public infrastructure, and
- (5) the compatibility of rural development with protection of agriculture, scenic landscapes, and resources.

Policy LU-20hh: All new development in the Glen Ellen area (as designated in the Glen Ellen Development and Design Guidelines) shall comply with the Glen Ellen Development and Design Guidelines, which are part of the County Development Code.

Circulation and Transit Element

The Circulation and Transit Element of the Sonoma County General Plan (2016) contains the following objectives and policies relevant to the proposed project:

Objective CT-1.2: Supplement the Highway 101 and SMART rail corridors with improvements designed to provide east/west access to these corridors.

Objective CT-1.5: Reduce greenhouse gas emissions by minimizing future increase in VMT [vehicle miles traveled], with an emphasis on shifting short trips by automobile to walking and bicycling trips.

Objective CT-1.6: Require that circulation and transit system improvements be done in a manner that, to the extent practical, is consistent with community and rural character. Minimizes disturbance of the natural environment, minimizes air and noise pollution, and helps reduce greenhouse gas emissions.

Objective CT-1.7: Reduce travel demand countywide by striving to provide a jobs/housing balance of approximately 1.5 jobs per household and encourage creation of jobs and housing in urbanized areas along the SMART passenger rail corridor and other transit centers.

Objective CT-1.8: Improve demand for transit by development of a growth management strategy encouraging projects in urbanized areas that decrease distance between jobs and housing, increase the stock of affordable housing, and increase density.

Policy CT-1b: Focus commute and through traffic onto Highway 101. Designate major arterial routes to serve primarily as connectors between urban areas.

Policy CT-1c: Work with the Cities to provide locations for jobs, housing, shopping, and coordination of location of transit along the Highway 101 corridor to reduce the volume of traffic on east/west corridors.

Policy CT-1d: Work with the Cities to provide jobs, housing, shopping, and coordination of local transit along the SMART passenger rail corridor to reduce the need for automobile travel to and from work and shopping centers.

Policy CT-1e: Support development, implementation, and operation of a passenger rail system and contiguous north south pedestrian and bicycle path along the SMART passenger rail corridor including the funding necessary to support a multi-modal feeder system.

Policy CT-1k: Encourage development that reduces VMT, decreases distances between jobs and housing, reduces traffic impacts, and improves housing affordability.

Policy CT-2f: Require discretionary development projects to provide bicycle and pedestrian improvements and gap closures necessary for safe and convenient bicycle and pedestrian travel between the project and the public transit system.

Policy CT-2v: Require discretionary development projects, where nexus is identified, to provide crossing enhancements at bus stops, recognizing that many transit riders have to cross the street on one of the two-way commutes.

Policy CT-2w: Increase the convenience and comfort of transit riders by providing more amenities at bus stops, including adequately-sized all-weather surfaces for waiting, shelters, trash cans, bike racks, and pedestrian-sized lighting. Required that these improvements be provided as part of nearby public or private development projects.

Policy CT-3c: The Sonoma County Bicycle and Pedestrian Advisory Committee (BPAC) shall be responsible for advising the Board of Supervisors, Planning Commission, Board of Zoning Adjustments, Project Review Advisory Committee, and County staff on the ongoing planning and coordination of the County's bicycle and pedestrian transportation network.

Policy CT-3d: The Regional Parks Department shall be responsible for establishing and maintaining Class I bikeways, and the Department of Transportation and Public Works (TPW) shall be responsible for establishing and maintaining Class II and III bikeways and pedestrian facilities along public rights-of-way in unincorporated areas.

Policy CT-3v: Where nexus exists, require private or public development to plan, design, and construct bicycle and pedestrian facilities to integrate with the existing and planned bicycle and pedestrian network.

Policy CT-3oo: Require new development in Urban Service Areas and unincorporated communities to provide safe, continuous, and convenient pedestrian access to jobs, shopping and other local services and destinations. Maintain consistency with City standards for pedestrian facilities in Urban Service Areas that are within a City's Sphere of Influence or Urban Growth Boundary.

Policy CT-3pp: Require pedestrian-oriented street design in Urban Service Areas and unincorporated communities.

Sonoma County Zoning Ordinance

Zoning is the instrument that implements the land use designations of the General Plan. In addition to establishing permitted uses, zoning may also establish development standards relating to issues such as intensity, setbacks, height, and parking. Projects submitted to the County for review and approval are generally evaluated for consistency with the zoning designations.

The County's Zoning Ordinance carries out the policies of the County General Plan by classifying and regulating the uses of land and structures within the unincorporated county, consistent with the General Plan. The Zoning Code describes various types of zoning districts and land use classifications, land use regulations, development standards, and environmental performance standards. The Zoning Ordinance applies to all land uses, subdivisions, and development within the county. The purpose of the Zoning Ordinance is to protect and to promote the public health, safety,

comfort, convenience, prosperity, and general welfare of residents, and businesses in the county. More specifically, the purposes of this Zoning Ordinance are to:

1. provide for the orderly and beneficial land use of the county;
2. protect the character and social and economic stability of agricultural, residential, commercial, industrial and other communities within the county;
3. protect the public safety and welfare by regulating the location and uses of all structures and land; and
4. protect and conserve the scenic, recreational and natural resource characteristics of the county.

The unincorporated county is divided into base zoning districts and combining zoning districts that are listed below:

1. Base Zoning

- a. Land Intensive Agriculture (LIA)
- b. Land Extensive Agriculture (LEA)
- c. Diverse Agriculture (DA)
- d. Resources and Rural Development (RRD)
- e. Timberland Production (TP)
- f. Agriculture and Residential (AR)
- g. Rural Residential (RR)
- h. Low Density Residential (R1)
- i. Medium Density Residential (R2)
- j. High Density Residential (R3)
- k. Planned Community (PC)
- l. Administrative and Professional Office (CO)
- m. Neighborhood Commercial (C1)
- n. Retail Business and Service (C2)
- o. General Commercial (C3)
- p. Limited Commercial (LC)
- q. Commercial Rural (CR)
- r. Agricultural Services (AS)
- s. Recreation and Visitor-Serving Commercial (K)
- t. Industrial Park (MP)
- u. Limited Urban Industrial (M1)
- v. Heavy Industrial (M2)
- w. Limited Rural Industrial (M3)
- x. Public Facilities (PF)
- y. Study (S)

2. Combining Districts

- a. Floodway (F1)
- b. Floodplain (F2)

- c. Affordable Housing (AH)
- d. Renewable Energy (RE)
- e. Local Guidelines (LG)
- f. Scenic Resources (SR)
- g. Riparian Corridor (RC)
- h. Biotic Habitat (BH)
- i. Valley Oak Habitat (VOH)
- j. Historic (HD)
- k. Geologic Hazard Area (G)
- l. Mineral Resource (MR)
- m. Workforce Housing (WH)
- n. Accessory Dwelling Unit Exclusion (Z)
- o. Visitor Residential (VR)
- p. B Districts (B6, B7, or B8), identifying maximum permitted density or minimum parcel or lot size
- q. Vacation Rental Exclusion (X)
- r. Traffic Sensitive (TS)

Historic Bridge Thematic District

In 1998, the Board of Supervisors established a historic bridge thematic district (HD), with a finding that doing so would afford long-term protection of these bridges with historic value and ensure that modifications are not detrimental to their historic integrity (Resolution 98-0046). The Board of Supervisors adopted specific procedures that govern the Landmarks Commission's review of proposed work on and removal of HD bridges. In 2003 the Monte Rio Bridge, also known as The Bohemian Highway Bridge over the Russian River, was rezoned HD and added to the list of County Historic Bridges Thematic District. Thus the procedures governing removal of HD bridges apply to the Project. A total of Thirteen bridges are currently designated as County Landmarks as part of the Historic Bridges Thematic District.

On December 1, 2020, the Sonoma County Landmarks Commission reviewed the proposed Project per the required procedures for reviewing proposed changes to bridges zoned as HD and for removal of historic landmarks. The Landmarks Commission considered the historical value of the Bohemian Highway Bridge, the impacts of removing the bridge from the Historic Bridges Thematic District, and alternatives to the proposed Project including repairing the bridge. Ultimately, the Landmarks Commission recommended approval of the proposed Project principally due to the absence of a feasible alternative. Additional discussion on alternatives is found in section six of this EIR.

4.11.3 Impact Analysis

a. Methodology and Significance Thresholds

The analysis in this section focuses on the compatibility of land uses identified in the proposed Project with existing and planned land uses within the Potential Sites, as well as consistency with any applicable land use plans, policies, or regulations. The following thresholds of significance are based on Appendix G of the *CEQA Guidelines*. For purposes of this Program EIR, implementation of the Project may have a significant adverse impact if it would do any of the following:

1. Physically divide an established community
2. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect

The General Plan consistency analysis describes existing regional and local plans and policies and is intended to fulfill the requirements of *CEQA Guidelines* Section 15125(d). The emphasis of the analysis is on plan inconsistency and potential conflicts between the Project and existing applicable land use plans, and whether any inconsistencies are significant environmental effects. The Project is considered consistent with the provisions of the identified regional and local plans if it meets the general intent of the applicable plans and does not conflict with any directly applicable policies. A given project need not be in perfect conformity with each and every policy nor does state law require precise conformity of a proposed project with every policy or land use designation. Courts have also acknowledged that general and specific plans attempt to balance a range of competing interests, and that it is nearly, if not absolutely, impossible for a project to be in perfect conformity with each and every policy set forth in the applicable plan. Additionally, in reaching such consistency conclusions, the County may also consider the consequences of denial of a project, which can also result in other policy inconsistencies. For example, Government Code Section 65589.5 explains that the potential consequences of limiting the approval of housing are reduced mobility, urban sprawl, excessive commuting, and air quality deterioration.

For an impact to be considered significant, any inconsistency would also have to result in a significant adverse change in the environment not already addressed in the other resource chapters of this EIR. The analysis below provides a brief overview of the most relevant policies from the various planning documents. However, the County's consistency conclusions are based upon the planning documents as a whole.

b. Project Impacts and Mitigation Measures

| |
|---|
| Threshold: Would the Project physically divide an established community? |
|---|

Impact LU-1 PROJECT IMPLEMENTATION WOULD NOT PHYSICALLY DIVIDE AN ESTABLISHED COMMUNITY. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Short-term construction impacts would be constrained within the Project site. Improvements to utilities or transportation infrastructure would be constructed within roadway rights-of-way and would not block access between existing communities. Section 4.16, *Transportation*, describes the required implementation of a construction traffic control plan, which would ensure roadways remain open and operable during construction activities. Therefore, existing roadways would not be blocked, and construction would not limit access to a community or restrict movement within a community.

Once completed, the new bridge will continue providing access to the Monte Rio community. Therefore, impacts related to dividing an established community would be less than significant.

Mitigation Measure

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

| |
|---|
| Threshold: Would the Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? |
|---|

Impact LU-2 THE PROJECT WOULD NOT RESULT IN A SIGNIFICANT ENVIRONMENTAL IMPACT DUE TO A CONFLICT WITH ANY LAND USE PLAN, POLICY, OR REGULATION. THEREFORE, THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

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

Plan Bay Area 2050 has specific strategies for transportation and the environment. The proposed Project is consistent with the plans objectives to maintain and optimize the existing transportation system, create healthy and safe streets and to reduce risks from hazards.

The Project would not conflict with any applicable land use plan adopted for the purpose of avoiding or mitigating an environmental effect, including the Sonoma County General Plan and zoning ordinance, as well as the regional Plan Bay Area 2050.

Mitigation Measure

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

4.11.4 Cumulative Impacts

A project's environmental impacts are "cumulatively considerable" if the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future project" (*CEQA Guidelines* Section 15065[a][3]). The geographic scope for cumulative land use and planning impacts is the County of Sonoma, with particular focus on unincorporated areas. This geographic scope is appropriate because the county limits represent the planning area for the County General Plan.

As discussed under Impact LU-1, the Project would not impede existing community connections. Because the Project would not impact neighborhood connectivity, the Project would not have a cumulatively considerable contribution to a significant cumulative impact related to physically dividing an established community.

As discussed under Impact LU-2, the Project would be consistent with the applicable regional and local goals and policies. In addition, any pending and future projects would be reviewed for consistency with the General Plan, and all other applicable regulatory land use actions prior to approval. All future projects in the unincorporated County would be required to adhere to applicable zoning and development regulations and general plan policies to mitigate environmental impacts where feasible. Therefore, it is anticipated that each cumulative project would be found consistent with applicable plans and policies prior to approval, such that those projects would not cause a significant cumulative environmental impact due to a conflict and as noted previously, the project-specific impact would be less than significant. Therefore, the Project in combination with other development envisioned by the County General Plan would not result in significant cumulative impact with respect to consistency with land use plans.

This page intentionally left blank.

Mineral Resources Table of Contents

| | | |
|-------------|--------------------------|--------|
| <u>4.12</u> | Mineral Resources..... | 4.12-1 |
| 4.12.1 | Setting..... | 4.12-1 |
| 4.12.1 | Regulatory Setting | 4.12-1 |
| 4.12.2 | Impact Analysis | 4.12-3 |

4.12 Mineral Resources

The analysis in this section addresses the potential for the proposed Project to result in the loss of mineral resources to the region.

4.12.1 Setting

Mineral resources are extremely valuable because of their limited supply and their usefulness in modern construction and industrial processes. Sonoma County has many valuable mineral resources that were historically extracted, including mercury, chromite, and copper. Sand, gravel, crushed rock, and building stone are some of the more valuable mineral resources in the present day. As of 2011, the county contained approximately 951 million tons of identified Portland Cement Concrete (PCC) grade aggregate resources, which the California Geologic Survey estimates to be able to meet aggregate demand for building and roadway construction until 2023 (California Geologic Survey 2013).

Removal of bedrock for building blocks, road base, and fill material has taken place in different areas and geologic settings of the County, but usually in highland areas with steep terrain (County of Sonoma 2006). Most of the Russian River and parts of other major streams in the County have been mined for sand and gravel to use in concrete and base and fill. Because of the difference in original materials and the processes involved, each geologic formation provides different types of useful minerals. The County has maps on file that show the local and extent of mineral resources considered significant by recent studies. There are no mapped mineral resources or mining sites in the Project area.

4.12.2 Regulatory Setting

a. Federal Regulations

U.S. Department of the Interior's Minerals Availability System

This system identifies between 15 and 17 rare Earth minerals as critical resources for United States Department of Defense applications or resources which are critical to national security. It recommends the development of a comprehensive approach to help ensure a secure supply of each resource and identifies risks as well as timeframes for actions.

b. State Regulations

Surface Mining and Reclamation Act

Gravel mining operations in Sonoma County, and throughout the state, are subject to the California Surface Mining and Reclamation Act (SMARA). The purpose of SMARA is to identify and protect areas containing significant mineral resources. In doing so, SMARA a) regulates surface mining operations to assure that adverse environmental effects are prevented or minimized, b) requires reclamation of mined lands to a usable condition that is readily adaptable to alternative land uses, c) produces and conserves minerals, and considers values relating to recreation, watershed, wildlife, range and forage, and aesthetic enjoyment, and d) eliminates residual hazards to the public health and safety. Mining must comply with SMARA through all phases of a project, including the reclamation process.

c. Local Regulations

Sonoma County Aggregate Resources Management Plan

The Sonoma County Aggregate Resources Management (ARM) Plan serves as the regulatory document with guidelines and objectives for sound management of aggregate mining in the county. The County adopted this plan in 1980 and updated in 1994, 2003, and 2010. The ARM Plan aims to meet future aggregate needs using resources in the County and to recognize that continued production needs to be managed in a way that reduces depletion of those resources. It includes the following features in summary (County of Sonoma 2020a):

1. Incentives to stimulate quarry production
2. Plans for continued in-stream extraction for flood and erosion control with protection for fisheries and other adjacent uses
3. Limitations on terrace mining
4. Support for recycling of aggregate products
5. Reclamation of terrace mining areas for agricultural uses and habitat restoration
6. Road mitigation programs with fees

Other features and details are provided on the County's website, where the following objectives are also discussed (County of Sonoma 2020b):

- Objective 1:** Assist existing quarry operations to increase production for high-quality uses in an environmentally sound manner.
- Objective 2:** Facilitate new or expanded quarry operations at designated sites or at other locations with resources which can meet the needs for aggregate in an environmentally sound manner.
- Objective 3:** Provide for terrace resources to meet the needs for high quality uses for a ten-year period and terminate terrace mining at the end of that period.
- Objective 4:** Manage instream resources on a sustained yield basis for high quality uses in a manner which reduces bank erosion, maintains flood flow capacities, protects adjacent uses, and minimizes impacts on fisheries, vegetation, and wildlife.
- Objective 5:** Continue and expand monitoring programs so that more information is available for future decisions about terrace and instream impacts and alternative management policies and approaches.
- Objective 6:** Reevaluate gravel extraction methods and production periodically to assess options which would further reduce environmental impacts and land use conflicts or better meet the County's aggregate needs.
- Objective 7:** Change specifications, standards, and practices where possible so that quarry rock will be more competitive with instream and terrace sources.
- Objective 8:** Reduce the need for additional aggregate through utilization of recycled and substitute materials, changes in development standards, and other means possible.

Objective 9: Encourage the retention of locally produced aggregate for use within Sonoma County.

In addition to compliance with the ARM Plan, proposed new gravel operations require County approval of a mining and reclamation plan and a use permit pursuant to County Ordinance 3437, which sets forth local implementation of the SMARA.

Sonoma County General Plan

The Sonoma County General Plan Open Space & Resource Conservation Element includes goals and policies for the protection of mineral resources, as follows:

Goal OSRC-13: Provide for production of aggregates to meet local needs and contribute the County's share of demand in the North Bay production-consumption region. Manage aggregate resources to avoid needless resource depletion and ensure that extraction results in the fewest environmental impacts.

Objective OSRC-13.1: Use the ARM Plan to establish priority areas for aggregate production and to establish detailed policies, procedures, and standards for mineral extraction.

Objective OSRC-13.2: Minimize and mitigate the adverse environmental effects of mineral extraction and reclaim mined lands.

Policy OSRC-13a: Consider lands designated in the ARM Plan as priority sites for aggregate production and mineral extraction and review requests for additional designations for conformity with the General Plan and the ARM Plan.

Policy OSRC-13b: Review projects for environmental impact and land use conflicts and consider the following minimum factors when approving mining permits: topsoil salvage, vegetation, fisheries and wildlife impacts, noise, erosion control, roadway conditions and capacities, reclamation and bonding, air quality, energy consumption, engineering and geological surveys, aggregate supply and replenishment, drainage, and the need for economical aggregate materials.

Policy OSRC-13c: Review projects that are on or near sites designated "Mineral Resources" in the ARM Plan for compatibility with future mineral extraction.

Sonoma County Zoning Code

Article 72 of the County's Zoning Code (Mineral Resource Combining District) regulates mining and reclamation of mined lands in the county, consistent with the ARM Plan. Combined with several base zones, various uses are permitted as a right or subject to a use permit. Incompatible uses and residential uses are restricted. Provisions of this article require County approval of surface mining use permit and approval of a reclamation plan.

4.12.3 Impact Analysis

a. Methodology and Significance Thresholds

Methodology

Impacts related to mineral resources were evaluated using information found in the County ARM Plan and on its website. Google Earth files and maps were also reviewed for areas near the Project site.

Significance Thresholds

For purposes of this EIR, implementation of the proposed project may have a significant adverse impact on mineral resources if the Project would do any of the following:

1. Result in the loss of availability of a known mineral resource of value to the region and residents of the state
2. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan

b. Project Impacts and Mitigation Measures

Threshold: Would the Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or a mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

Impact MIN-1 **ALTHOUGH MINERAL EXTRACTION SITES OCCUR THROUGHOUT THE COUNTY, NONE OCCURS AT THE PROJECT SITE. THERE WOULD BE NO IMPACT.**

The Project area does not contain mapped mineral resources, and the Project would not involve mining or require the acquisition of land where active mining operations are occurring. The Project would not result in the loss of availability of a known mineral resource or mineral recovery sites.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

No impact would occur and mitigation is not required.

This page intentionally left blank.

Noise Table of Contents

| | | |
|---------|--------------------------|---------|
| 4.13 | Noise | 4.13-1 |
| 4.13.6 | Setting..... | 4.13-1 |
| 4.13.7 | Regulatory Setting | 4.13-5 |
| 4.13.8 | Impact Analysis | 4.13-8 |
| 4.13.9 | Mitigation Measures..... | 4.13-17 |
| 4.13.10 | Cumulative Impacts | 4.13-17 |

Tables

| | | |
|--------------|--|---------|
| Table 4.13-1 | AASHTO Maximum Vibration Levels for Preventing Damage..... | 4.13-3 |
| Table 4.13-2 | Human Response to Steady State Vibration | 4.13-4 |
| Table 4.13-3 | Human Response to Transient Vibration | 4.13-4 |
| Table 4.13-4 | Maximum Allowable Exterior Noise Exposures for Non-transportation Noise Sources | 4.13-7 |
| Table 4.13-5 | Vibration Levels Measured during Construction Activities | 4.13-10 |
| Table 4.13-6 | HVAC Noise Levels | 4.13-11 |
| Table 4.13-7 | Existing and Future Traffic Volumes (PM Peak Hour) ¹ | 4.13-12 |

4.13 Noise

This section analyzes the temporary noise impacts related to construction activity and long-term noise impacts associated the Project. The construction noise analysis is based on data within a technical memorandum completed by AMBIENT Airy Quality & Noise Consulting, prepared for the County in 2021.

4.13.1 Setting

a. Overview of Sound Measurement

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (California Department of Transportation [Caltrans] 2013).

Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response, which is most sensitive to frequencies around 4,000 Hertz (Hz) and less sensitive to frequencies around and below 100 Hz (Kinsler, et. al. 1999). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dBA; reducing the energy in half would result in a 3 dBA decrease (Crocker 2007).

Human perception of noise has no simple correlation with sound energy: the perception of sound is not linear in terms of dBA or in terms of sound energy. Two sources do not “sound twice as loud” as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increase or decrease (i.e., twice the sound energy); that a change of 5 dBA is readily perceptible (8 times the sound energy); and that an increase (or decrease) of 10 dBA sounds twice (half) as loud (10.5 times the sound energy) (Crocker 2007).

Sound changes in both level and frequency spectrum as it travels from the source to the receiver. The most obvious change is the decrease in level as the distance from the source increases. The manner in which noise reduces with distance depends on factors such as the type of sources (e.g., point or line, the path the sound will travel, site conditions, and obstructions). Noise levels from a point source typically attenuate, or drop off, at a rate of 6 dBA per doubling of distance (e.g., construction, industrial machinery, ventilation units). Noise from a line source (e.g., roadway, pipeline, railroad) typically attenuates at about 3 dBA per doubling of distance (Caltrans 2013). The propagation of noise is also affected by the intervening ground, known as ground absorption. A hard site, such as a parking lot or smooth body of water, receives no additional ground attenuation and the changes in noise levels with distance (drop-off rate) result from simply the geometric spreading of the source. An additional ground attenuation value of 1.5 dBA per doubling of distance applies to a soft site (e.g., soft dirt, grass, or scattered bushes and trees) (Caltrans 2013). Noise levels may also be reduced by intervening structures; the amount of attenuation provided by this “shielding” depends on the size of the object and the frequencies of the noise levels. Natural terrain features such as hills and dense woods, and man-made features such as buildings and walls, can significantly

alter noise levels. Generally, any large structure blocking the line of sight will provide at least a 5-dBA reduction in source noise levels at the receiver (Federal Highway Administration [FHWA] 2017). Structures can substantially reduce exposure to noise as well. The FHWA's guidelines indicate that modern building construction generally provides an exterior-to-interior noise level reduction of 20 to 35 dBA with closed windows.

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important factors of noise impacts. Most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors have been developed. One of the most frequently used noise metrics is the equivalent noise level (L_{eq}); it considers both duration and sound power level. L_{eq} is defined as the single steady A-weighted level equivalent to the same amount of energy as that contained in the actual fluctuating levels over time. Typically, L_{eq} is summed over a one-hour period. L_{max} is the highest root-mean-square (RMS) sound pressure level within the sampling period, and L_{min} is the lowest RMS sound pressure level within the measuring period (Crocker 2007). L_n values are statistical noise levels (sometimes called percentiles) used to assess noise levels from fluctuating noise sources over time. The commonly used values of n for L_n are 10, 50, and 90. L_{10} is the level exceeded for 10 percent of the time; L_{50} is the level exceeded for 50 percent of the time; and L_{90} is the level exceeded for 90 percent of the time.

Noise that occurs at night tends to be more disturbing than that occurring during the day. Community noise is usually measured using Day-Night Average Level (L_{dn}), which is the 24-hour average noise level with a +10 dBA penalty for noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours; it is also measured using Community Noise Equivalent Level (CNEL), which is the 24-hour average noise level with a +5 dBA penalty for noise occurring from 7:00 p.m. to 10:00 p.m. and a +10 dBA penalty for noise occurring from 10:00 p.m. to 7:00 a.m. (Caltrans 2013). Noise levels described by L_{dn} and CNEL usually differ by about 1 dBA. The relationship between the peak-hour L_{eq} value and the L_{dn} /CNEL depends on the distribution of traffic during the day, evening, and night. Quiet suburban areas typically have CNEL noise levels in the range of 40 to 50 dBA, while areas near arterial streets are in the 50 to 60-plus CNEL range. Normal conversational levels are in the 60 to 65-dBA L_{eq} range; ambient noise levels greater than 65 dBA L_{eq} can interrupt conversations (Federal Transit Administration [FTA] 2018).

b. Vibration

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent structures. The number of cycles per second of oscillation makes up the vibration frequency, described in terms of hertz (Hz). The frequency of a vibrating object describes how rapidly it oscillates. The normal frequency range of most groundborne vibration that can be felt by the human body starts from a low frequency of less than 1 Hz and goes to a high of about 200 Hz (Crocker 2007).

While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low-frequency vibration. Vibration in buildings, such as from nearby construction activities, may cause windows, items on shelves, and pictures on walls to rattle. Vibration of building components can also take the form of an audible low-frequency rumbling noise, referred to as groundborne noise. Groundborne noise is usually only a problem when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 to 200 Hz), or when foundations or utilities, such as sewer and water pipes, physically connect the structure and the vibration source (FTA 2018). Although groundborne vibration is sometimes noticeable in outdoor

environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants and vibration-sensitive land uses.

Vibration energy spreads out as it travels through the ground, causing the vibration level to diminish with distance away from the source. High-frequency vibrations diminish much more rapidly than low frequencies, so low frequencies tend to dominate the spectrum at large distances from the source. Discontinuities in the soil strata can also cause diffractions or channeling effects that affect the propagation of vibration over long distances (Caltrans 2020). When a building is impacted by vibration, a ground-to-foundation coupling loss will usually reduce the overall vibration level. However, under rare circumstances, the ground-to-foundation coupling may actually amplify the vibration level due to structural resonances of the floors and walls.

Vibration amplitudes are usually expressed in peak particle velocity (PPV) or RMS vibration velocity. The PPV and RMS velocity are normally described in inches per second. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings (Caltrans 2020).

Vibration limits used in this analysis to determine a potential impact to nearby land uses from construction activities are based on information contained in Caltrans' *Transportation and Construction Vibration Guidance Manual* (Caltrans 2020). Maximum recommended vibration limits by American Association of State Highway and Transportation Officials (AASHTO) are identified in Table 4.13-1.

Table 4.13-1 AASHTO Maximum Vibration Levels for Preventing Damage

| Type of Situation | Limiting Velocity (in/sec) |
|--|----------------------------|
| Historic sites or other critical locations | 0.1 |
| Residential buildings, plastered walls | 0.2–0.3 |
| Residential buildings in good repair with gypsum board walls | 0.4–0.5 |
| Engineered structures, without plaster | 1.0–1.5 |

Source: Caltrans 2020

Based on AASHTO recommendations, limiting vibration levels to below 0.4 in/sec PPV at residential structures would prevent structural damage (plastered walls is indicative of construction processes that have not been common for over a 100 years and are therefore not anticipated to be near project construction). These limits are applicable regardless of the frequency of the source. However, as shown in Table 4.13-2 and Table 4.13-3, potential human annoyance associated with vibration is usually different if it is generated by a steady state or a transient vibration source.

Table 4.13-2 Human Response to Steady State Vibration

| PPV (in/sec) | Human Response |
|-------------------------------|------------------------|
| 3.6 (at 2 Hz)–0.4 (at 20 Hz) | Very disturbing |
| 0.7 (at 2 Hz)–0.17 (at 20 Hz) | Disturbing |
| 0.10 | Strongly perceptible |
| 0.035 | Distinctly perceptible |
| 0.012 | Slightly perceptible |

Source: Caltrans 2020

Table 4.13-3 Human Response to Transient Vibration

| PPV (in/sec) | Human Response |
|--------------|------------------------|
| 2.0 | Severe |
| 0.9 | Strongly perceptible |
| 0.24 | Distinctly perceptible |
| 0.035 | Barely perceptible |

Source: Caltrans 2020

As shown in Table 4.13-2, the vibration level threshold at which steady vibration sources are considered to be distinctly perceptible is 0.035 in/sec PPV. However, as shown in Table 4.13-3, the vibration level threshold at which transient vibration sources (such as construction equipment) are considered to be distinctly perceptible is 0.24 in/sec PPV. This analysis uses the distinctly perceptible threshold for purposes of assessing vibration impacts.

Although groundborne vibration is sometimes noticeable in outdoor environments, groundborne vibration is almost never annoying to people who are outdoors; the vibration level threshold for human perception is assessed at occupied structures (FTA 2018). Therefore, vibration impacts are assessed at the structure of an affected property.

c. Existing Noise Setting

According to the County’s General Plan 2020 Noise Element, substantial noise generators in the County include:

1. Traffic on State highways and major County roads
2. Aircraft operations at public use airports
3. Industrial and heavy commercial activities
4. Railroads
5. Infineon (Sears Point) International Raceway
6. The Geysers geothermal power plants
7. Solid waste landfills and transfer stations
8. Concerts, special events and other activities generating amplified outdoor sound

The principal noise generator occurring near the Project site would be vehicle traffic on major County roads in the area. These roadways include State Route 116 and Bohemian Highway, which are identified as “Noise Impacted Road Segments” in the County’s General Plan 2020 Noise Element.

Local collector streets typically are not considered substantial noise sources as traffic volume and speeds are generally lower than for freeways and major County roads.

Industrial sources are identified in the County's General Plan 2020 Noise Element, but the Project is not near any of these sites.

Airports located in Sonoma County include the Charles M. Schulz Sonoma County Airport, the Cloverdale Municipal Airport, the Healdsburg Municipal Airport, the Petaluma Municipal Airport, the Sonoma Skypark Airport, and the Sonoma Valley Airport. The Project is not near these airports.

Sonoma-Marin Area Rail Transit (SMART) is a passenger rail service currently operating from Marin County to Sonoma County as far north as the Sonoma County Airport. The SMART line is not near the Project site.

The Project site is not located near other mapped noise generating sources, including the Infineon International Raceway, solid waste landfills and transfer stations, or the geothermal plants.

d. Sensitive Receivers

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. The County's Guidelines for the Preparation of Noise Analysis lists noise-sensitive uses as residences (including single-family homes, multi-family apartments, condominiums, and mobile homes, and other permitted structures in residential use), schools (both public and private), day care facilities, hospitals, nursing homes, long term medical or mental care facilities, places of worship, libraries and museums, transient lodging, and office building interiors.

Vibration sensitive receivers are similar to noise sensitive receivers, such as residences and institutional uses (e.g., schools, libraries, and religious facilities).

4.13.2 Regulatory Setting

a. State Regulations

California Building Code

CCR Title 24, Building Standards Administrative Code, Part 2, and the California Building Code codify the State noise insulation standards. These noise standards apply to new construction in California to control interior noise levels as they are affected by exterior noise sources. The regulations specify that interior noise levels for residential and school land uses shall not exceed 45 dBA CNEL.

California General Plan Guidelines

The California General Plan Guidelines, published by the Governor's Office of Planning and Research, indicate acceptable, specific land use types in areas with specific noise exposure. The guidelines also offer adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution. These guidelines are advisory, and local jurisdictions, including the County of Sonoma, have the authority to set specific noise standards based on local conditions. Please refer to the discussion below, under *Sonoma County General Plan 2020*, for the compatibility guidelines adopted by the County of Sonoma.

Caltrans Ground Borne Vibration Guidelines

The Transportation and Construction Vibration Guidance Manual provides guidance on vibration issues associated with the construction, operation, and maintenance of Caltrans projects. These guidelines address vibration criteria and establish thresholds for vibration-related annoyance to people, vibration-related damage to structures, and vibration-related adverse effects to sensitive equipment. This manual also addresses vibration prediction and screening assessment for construction equipment, methods that can be used to reduce vibration effects from transportation and construction sources, general procedures for addressing vibration issues, and vibration measurement and instrumentation. Guidelines and procedures provided in this manual should be treated as screening tools for assessing the potential for adverse effects related to human perception and structural damage.

b. Local Regulations

Sonoma County General Plan 2020

The Noise Element of the Sonoma County General Plan 2020 contains noise goals, objectives, and policies for the County, including:

Goal NE-1: Protect people from the adverse effects of exposure to excessive noise and to achieve an environment in which people and land uses may function without impairment from noise.

Objective NE-1.1: Provide noise exposure information so that noise impacts may be effectively evaluated in land use planning and project review.

Objective NE-1.2: Develop and implement measures to avoid exposure of people to excessive noise levels.

Objective NE-1.3: Protect the present noise environment and prevent intrusion of new noise sources which would substantially alter the noise environment.

Objective NE-1.4: Mitigate noise from recreational and visitor serving uses. The following policies shall be used to achieve the above objectives:

Policy NE-1a: Designate areas within Sonoma County as noise impacted if they are exposed to existing or projected exterior noise levels exceeding 60 dB L_{dn} , 60 dB CNEL, or the performance standards of Table 4.13-4.

Policy NE-1b: Avoid noise sensitive land use development in noise impacted areas unless effective measures are included to reduce noise levels. For noise due to traffic on public roadways, railroads and airports, reduce exterior noise to 60 dB L_{dn} or less in outdoor activity areas and interior noise levels to 45 dB L_{dn} or less with windows and doors closed. Where it is not possible to meet this 60 dB L_{dn} standard using a practical application of the best available noise reduction technology, a maximum level of up to 65 dB L_{dn} may be allowed but interior noise level shall be maintained so as not to exceed 45 dB L_{dn} . For uses such as Single Room Occupancy, Work-Live, Mixed Use Projects, and Caretaker Units, exterior noise levels above 65 dB L_{dn} or the Table 4.13-4 standards may be considered if the interior standards of 45 dB L_{dn} can be met. For schools, libraries, offices, and other similar uses, the interior noise standard shall be 45 dB L_{eq} in the worst-case hour when the building is in use.

Policy NE-1c: Control non-transportation related noise from new projects. The total noise level resulting from new sources shall not exceed the standards in Table 4.13-4 as measured at the exterior property line of any adjacent noise sensitive land use. Limit exceptions to the following:

- (1) If the ambient noise level exceeds the standard in Table 4.13-4, adjust the standard to equal the ambient level, up to a maximum of 5 dBA above the standard, provided that no measurable increase (i.e. +/- 1.5 dBA) shall be allowed
- (2) Reduce the applicable standards in Table 4.13-4 by five dBA for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises, such as pile drivers and dog barking at kennels
- (3) Reduce the applicable standards in Table 4.13-4 by 5 decibels if the proposed use exceeds the ambient level by 10 or more decibels
- (4) For short term noise sources which are permitted to operate no more than six days per year, such as concerts or race events, the allowable noise exposures shown in Table 4.13-4 may be increased by 5 dB. These events shall be subject to a noise management plan including provisions for maximum noise level limits, noise monitoring, complaint response and allowable hours of operation. The plan shall address potential cumulative noise impacts from all events in the area.
- (5) Noise levels may be measured at the location of the outdoor activity area of the noise sensitive land use, instead of the exterior property line of the adjacent noise sensitive land use where:
 - (a) the property on which the noise sensitive use is located has already been substantially developed pursuant to its existing zoning, and
 - (b) there is available open land on those noise sensitive lands for noise attenuation. This exception may not be used on vacant properties which are zoned to allow noise sensitive uses.

Table 4.13-4 Maximum Allowable Exterior Noise Exposures for Non-transportation Noise Sources

| Hourly Noise Metric ¹ , dBA | Daytime (7 a.m. to 10 p.m.) | Nighttime (10 p.m. to 7 a.m.) |
|--|-----------------------------|-------------------------------|
| L ₅₀ (30 minutes in any hour) | 50 | 45 |
| L ₂₅ (15 minutes in any hour) | 55 | 50 |
| L ₀₈ (4 minutes 48 seconds in any hour) | 60 | 55 |
| L ₀₂ (72 seconds in an hour) | 65 | 60 |

¹ The sound level exceeded n% of the time in an hour, e.g., the L50 is the value exceeded 50% of the time or 30 minutes in any hour.

Source: Sonoma County General Plan 2020 Noise Element

Policy NE-1d: Consider requiring an acoustical analysis prior to approval of any discretionary project involving a potentially significant new noise source or a noise sensitive land use in a noise impacted area. The analysis shall:

- (1) Be the responsibility of the applicant,
- (2) Be prepared by a qualified acoustical consultant,
- (3) Include noise measurements adequate to describe local conditions,
- (4) Include estimated noise levels in terms of Ldn and/or the standards of Table 4.13-4 for existing and projected future (20 years hence) conditions, based on accepted engineering data and practices, with a comparison made to the adopted policies of the Noise Element. Where low frequency noise (ex: blasting) would be generated, include assessment of noise

levels and vibration using the most appropriate measuring technique to adequately characterize the impact,

- (5) Recommend measures to achieve compliance with this Element. Where the noise source consists of intermittent single events, address the effects of maximum noise levels on sleep disturbance,
- (6) Include estimates of noise exposure after these measures have been implemented, and
- (7) Be reviewed by the Permit and Resource Management Department and found to be in compliance with PRMD guidelines for the preparation of acoustical analyses.

Policy NE-1e: Continue to follow building permit procedures to ensure that requirements based upon the acoustical analysis are implemented.

Policy NE-1f: Require development projects that do not include or affect residential uses or other noise sensitive uses to include noise mitigation measures where necessary to maintain noise levels compatible with activities planned for the project site and vicinity.

Policy NE-1g: Enforce the State Noise Insulation Standards (Title 24, Part 2, California Administrative Code and Appendix Chapter 12 of the California Building Code) concerning new multiple occupancy dwellings.

Sonoma County Guidelines for Preparation of Noise Analysis

The County's Guidelines for the Preparation of Noise Analysis outlines the methods and recommendations for use when preparing an acoustical analysis in Sonoma County (County of Sonoma 2019). The guidelines build on the Sonoma County General Plan 2020 Noise Element and outline the noise analysis process, criteria for requiring a noise analysis, noise analysis protocol, and noise management methodology for individual projects.

The County guidelines address temporary construction noise, which is not specifically included in the General Plan 2020 Noise Element. The guidelines state that temporary construction noise generally needs to be evaluated at a qualitative level, given its temporary and short-term nature, however, construction noise may be considered significant if it occurs in the early morning or evening hours and require a quantitative analysis. If construction activities occur during the hours of 10 p.m. to 7 a.m., then the noise standards in Table 4.13-4 would apply.

4.13.3 Impact Analysis

a. Thresholds of Significance

To determine whether a project would result in a significant noise impact, the County's Guidelines for the Preparation of Noise Analysis states that a noise study must answer the CEQA Initial Study checklist questions. This requires consideration of whether a project would result in:

1. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies
2. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels
3. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project
4. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project

5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels
6. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels

Since preparation of the County's Guidelines for the Preparation of Noise Analysis, the CEQA Initial Study checklist questions for noise were revised for conciseness by combining the above questions into three questions. However, the issues to analyze and the thresholds are substantively the same. The revised questions require consideration of whether a project would result in:

1. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies
2. Generation of excessive groundborne vibration or groundborne noise levels
3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels

Specifically, per the *CEQA Guidelines* Appendix G Initial Study checklist questions, noise impacts would normally be considered significant if:

Construction Noise

1. Construction noise occurs between 10 p.m. to 7 a.m. and exceeds the noise limits in Table 4.13-4.

Operational Noise

1. Operational noise exceeds the noise limits in Table 4.13-4
2. For traffic-related noise, impacts would be considered significant if the Project would result in exposure of sensitive receptors to an unacceptable increase in noise levels. For purposes of this analysis, a significant impact would occur if project-related traffic increases the ambient noise environment of noise-sensitive locations by 3 dBA or more if the locations are subject to noise levels in excess of 60 CNEL for exterior areas or 45 CNEL for interior noise levels, or by 5 dBA or more if the locations are not subject to noise levels in excess of the aforementioned standards.

Vibration

1. For human receivers, the vibration level threshold to determine significance is 0.24 in/sec PPV (Caltrans 2020). For structures, based on AASHTO recommendations, the vibration level threshold to determine significance is 0.4 in/sec PPV.

Land Use Compatibility

1. Avoid noise sensitive land use development in noise impacted areas unless effective measures are included to reduce noise levels. For noise due to traffic on public roadways, railroads and airports, reduce exterior noise to 60 dB L_{dn} or less in outdoor activity areas and interior noise levels to 45 dB L_{dn} or less with windows and doors closed. Where it is not possible to meet this 60 dB L_{dn} standard using a practical application of the best available noise reduction

technology, a maximum level of up to 65 dB L_{dn} may be allowed but interior noise level shall be maintained so as not to exceed 45 dB L_{dn}.

b. Methodology

Construction Noise

Construction noise was estimated in a technical memorandum prepared by AMBIENT Airy Quality & Noise Consulting, prepared for the County in 2021. During construction of the Project, noise from construction activities may intermittently dominate the noise environment in the immediate Project area. Table 4.13-5 summarizes noise levels produced by construction equipment commonly used on roadway and bridge construction projects.

Table 4.13-5 Human Response to Transient Vibration

| Equipment | Noise Level (dBA at 50 feet) | |
|-----------------------------|------------------------------|-----------------|
| | L _{max} | L _{eq} |
| Backhoes | 78 | 74 |
| Bulldozers | 82 | 78 |
| Compressors | 78 | 74 |
| Cranes | 81 | 73 |
| Concrete Pump Trucks | 81 | 74 |
| Concrete Saws | 90 | 83 |
| Drill Rigs | 79 | 72 |
| Dump Trucks | 77 | 73 |
| Grader | 85 | 81 |
| Hoe Rams | 90 | 83 |
| Hydraulic Break Rams | 90 | 80 |
| Front End Loaders | 79 | 75 |
| Jackhammers | 85 | 82 |
| Paving Equipment/Scarifiers | 85 | 82 |
| Pavers | 85 | 74 |
| Pneumatic Tools | 85 | 82 |
| Pumps | 81 | 78 |
| Rollers | 80 | 73 |
| Scrapers | 84 | 80 |
| Tractors | 84 | 80 |
| Welders/Torches | 73 | 70 |

Based on the levels depicted in Table 4.13-5, individual construction equipment can be expected to generate intermittent maximum instantaneous noise levels ranging from approximately 73 to 90 dBA L_{max} at a distance of 50 feet. Average-hourly noise levels associated with the operation of individual pieces of construction equipment can range from approximately 70 to 83 dBA L_{eq}.

Noise produced by construction equipment decreases at a rate of about 6 decibels (dB) per doubling of distance from the source. Based on this attenuation rate, the distances to nearby land uses, the equipment noise levels identified in Table 4.13-5, and assuming multiple pieces of equipment operating simultaneously, the highest predicted average-hourly noise levels at nearby land uses would range from approximately 63 to 88 dBA Leq.

Groundborne Vibration

The Project would not include any substantial vibration sources associated with operation. Therefore, construction activities have the greatest potential to generate ground-borne vibration affecting nearby receivers, especially during road construction and paving activities. The greatest vibratory source during general construction activities would be anticipated to be a vibratory roller. Construction vibration estimates are based on vibration levels reported by Caltrans and the FTA, summarized in the AMBIENT noise memo. Table 4.13-6 shows typical vibration levels for various pieces of construction equipment used in the assessment of construction vibration (AMBIENT 2021).

Table 4.13-6 Representative Vibration Levels for Construction Equipment

| Equipment | PPV at 25 ft. (in/sec) |
|------------------|------------------------|
| Vibratory Roller | 0.210 |
| Hoe Ram | 0.089 |
| Large Bulldozer | 0.089 |
| Caisson Drilling | 0.089 |
| Loaded Trucks | 0.076 |
| Jackhammers | 0.035 |
| Small Bulldozers | 0.003 |

Source: AMBIENT 2021

Operational Noise Sources

The Project will not involve construction of a new roadway, cause a significant change in vertical or horizontal alignment, or result in an increase in capacity. The noise resulting from the operation of the bridge would not be an increase from the baseline of the existing bridge.

c. Impact Analysis

| |
|--|
| <p>Threshold:</p> <p>Would the Project result in generation of noise levels in excess of standards established in the County General Plan or Noise Ordinance?</p> <p>Would the Project result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?</p> <p>Would the Project result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?</p> |
|--|

Impact NOI-1 TEMPORARY CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE PROJECT COULD RESULT IN NOISE LEVEL INCREASES THAT WOULD EXCEED APPLICABLE CONSTRUCTION NOISE STANDARDS AT NEARBY NOISE SENSITIVE RECEIVERS. THIS WOULD BE A POTENTIALLY SIGNIFICANT IMPACT AND MITIGATION IS REQUIRED. OPERATIONAL NOISE IMPACTS FROM THE PROJECT WOULD NOT EXCEED COUNTY STANDARDS. THIS WOULD BE A LESS THAN SIGNIFICANT IMPACT.

Construction

General Construction Activities

Existing land uses in the Project vicinity consist predominantly of a mix of commercial and residential uses. The nearest noise-sensitive land uses include residential uses located north of the bridge, along SR 116, and south of the bridge, along River Boulevard to the east and Moscow Road to the west. Highland Dell Lodge is located approximately 350 feet east of the existing bridge, along River Boulevard. Public beaches operated by the Monte Rio Recreation and Parks District (MRRPD) are on the north and south sides of the river, adjacent to the Project site, and include Big Rocky Beach and Sandy Beach on the north side and Dutch Bill Beach on the south side. MRRPD’s Monte Rio Community Center is located to the northwest of the existing bridge, south of SR 116. In addition to these nearby land uses, the Monte Rio Amphitheater is located approximately 575 feet south of the existing bridge.

Predicted noise levels at nearby land uses can be found below in Table 3.13-7.

Table 4.13-7 Predicted noise levels at nearby land uses

| Nearby Land Uses | Predicted Highest Average - Hourly Noise Levels (dBA L _{eq}) | | | |
|--|--|-------------------|-----------------------------------|-------------|
| | Clearing / Grubbing | Bridge Demolition | Bridge Construction / Pile Boring | Road Paving |
| <i>Reference Noise Level at 50 feet:</i> | 84 | 86 | 84 | 84 |
| Residence North of Bridge | 68 | 71 | 68 | 73 |
| Residence Northeast of Bridge | 67 | 70 | 67 | 68 |
| Residence South of Bridge | 67 | 74 | 67 | 68 |
| Residences along Moscow Road | 71 | 67 | 71 | 71 |
| Dutch Bill Beach | 79 | 81 | 79 | 79 |
| Big Rocky Beach | 78 | 80 | 78 | 78 |
| Monte Rio Community Center | 67 | 69 | 67 | 72 |
| Rio Café Outdoor Dining Area | 68 | 71 | 68 | 73 |

| | | | | |
|---|----|----|----|----|
| Highland Dell Lodge | 63 | 69 | 63 | 63 |
| Russian River Empowerment Center/Monte Rio Amphitheater | 64 | 65 | 64 | 66 |
| Rio Theater | 76 | 79 | 76 | 86 |
| Noel's Automotive | 83 | 71 | 83 | 88 |
| Bartlett's Market | 78 | 70 | 78 | 83 |
| Lovett's Nursery | 71 | 73 | 71 | 85 |
| West County Financial Cooperative | 71 | 73 | 71 | 85 |
| Cool City Surf & Skate Shop | 70 | 74 | 70 | 72 |
| The Pink Elephant | 73 | 70 | 73 | 77 |
| Russian River Historical Society | 74 | 68 | 74 | 74 |

The highest predicted average-hourly noise levels at the nearest residences would range from approximately 67 to 74 dBA Leq. Predicted average-hourly noise levels at nearby outdoor recreational use areas, including Dutch Bill Beach and Big Rocky Beach would range from approximately 78 to 81 dBA Leq. Predicted exterior noise levels at Rio Café, Highland Dell Lodge, and the Russian River Empowerment Center/Amphitheater would range from approximately 63 to 73 dBA Leq. Predicted exterior noise levels at nearby commercial land uses, including Noel's Automotive, Bartlett's Market, Lovett's Nursery, West Coast Financial Cooperative, Rio Theater, Cool City Surf & Skate Shop, The Pink Elephant, and the Russian River Historical Society would range from approximately 68 to 88 dBA Leq.

The highest predicted average-hourly noise levels are projected to occur at land uses located nearest proposed construction, demolition, and road paving areas, including Bartlett's Market, Noel's Automotive, Rio Theater, Lovett's Nursery, and West Coast Financial; it is important to note that predicted noise levels for construction and demolition activities were estimated at locations closest to the nearby existing land uses and assuming that multiple pieces of equipment would be operating simultaneously. Noise levels associated with construction and demolition activities would be short-term (i.e., typically occurring over a period of days or weeks) and would decrease as the distance between nearby land uses and construction/demolition activities increases. Actual noise levels would vary depending on various factors, including the type and number of pieces of equipment used, and duration of use.

Although construction of the new bridge will occur over a three-year time frame, demolition and construction activities would be focused in the months between April and October. As a result, construction and demolition activities would be short-term and would not occur continuously for an extended duration (i.e., one year, or longer) in the immediate vicinity of nearby existing land uses. However, in comparison to ambient daytime noise levels, construction-generated noise levels at the nearest land uses would be detectable. With regard to nearby noise-sensitive residential dwellings and the Highland Dell Lodge, activities occurring during the more noise-sensitive nighttime hours would be of particular concern given the potential for increased levels of annoyance and sleep disruption to building occupants. The Project would be constructed in compliance with the County's noise requirements and Caltrans Standard Specifications Section 14-8.02. However, if uncontrolled, construction noise may disturb occupants of nearby residential dwellings and Highland Dell Lodge.

Construction activities that occur between 7 a.m. to 10 p.m. would be required to comply with County standards, and therefore if construction took place during these hours, general construction activity noise levels would be less than significant.

Construction that occurs outside of the 7 a.m. to 10 p.m. allowed hours would be subject to the County noise standards listed in Table 4.13-4. Construction equipment could be located as close as 25 feet to the nearest noise-sensitive receivers, but would typically be located at an average distance further away due to the nature of construction (i.e., each piece of construction equipment would work in different locations throughout the day and average a further distance). It is conservatively assumed that the construction equipment would operate, on average, 50 feet from the nearest noise-sensitive receivers. At a distance of 50 feet, an excavator, loader, and a dump truck would generate a noise level of 80 dBA L_{eq} . The distance at which these pieces of equipment would generate 45 dBA L_{50} would be 2,800 feet. General construction activities that occur within 2,800 feet of existing noise-sensitive land uses between 10 p.m. to 7 a.m., construction noise levels would exceed the 45 dBA L_{50} County noise limit. Therefore, construction activities associated with the Project could exceed the 45 dBA L_{50} County noise limit and could result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project. Noise impacts from general construction activities during the nighttime hours would be potentially significant and mitigation measures would be required.

Impact-related Construction Activities

Use of impact devices, such as an impact pile driver and a breaker will not be used. Piles will be cast-in drill hole piles (CIDH) and removal of the existing bridge will take place using either jackhammers or cutting the bridge deck in sections. Existing piers would be cut below grade, approximately three or four feet below river bottom. Therefore, impacts would be less than significant and no mitigation measures would be required.

Operation

The Project will not involve construction of a new roadway, cause a significant change in vertical or horizontal alignment, or result in an increase in capacity. The noise resulting from the operation of the bridge would not be an increase from the baseline of the existing bridge. This impact would be less than significant.

Mitigation Measures

NOI-1 General Construction Activities Noise Reduction Measures

Night work will be considered on an as needed basis, and only occur with prior County approvals. If construction activities occur between the hours of 10 p.m. to 7 a.m., within 0.5 mile of a noise-sensitive receiver (residences, schools, day care facilities, hospitals, nursing homes, long term medical or mental care facilities, places of worship, libraries and museums, transient lodging, and office building interiors), the following measures shall be implemented:

- 1) Nighttime construction noise shall not exceed the noise level standards shown in Table 4.13-4 when conducted between the hours of 10 p.m. to 7 a.m.
- 2) The Project applicant shall retain a qualified consultant to prepare a project-specific construction noise impact analysis. The results shall be submitted to Sonoma County for review and approval prior to the onset of any night construction work.

- 3) The analysis of nighttime construction activities shall be completed in accordance with the County's Guidelines for the Preparation of Noise Analysis. The analysis shall consider the type of construction equipment to be used and the potential noise levels at noise-sensitive receivers located within 0.5 mile of the Potential Site.
- 4) Provided the nighttime construction noise analysis determines that nighttime noise levels will not exceed 45 dBA L₅₀, 50 dBA L₂₅, 55 dBA L₀₈, or 60 dBA L₀₂ between the hours of 10 p.m. to 7 a.m., construction may proceed without additional measures.
- 5) Provided the nighttime construction noise analysis determines that nighttime noise levels would exceed the nighttime standards shown in Table 4.13-4, additional measures shall be implemented to reduce noise levels below the standard. These measures may include, but not be limited to, use of temporary noise barriers or performing activities at a further distance from the noise-sensitive land use.

Significance After Mitigation

Impacts from general construction activities performed between 10 p.m. to 7 a.m. would be less than significant with implementation of Mitigation Measure NOI-1 because nighttime construction, if granted to proceed by the County Project Manager, would be required to comply with the noise standards shown in Table 4.13-4 and also require a project specific noise analysis with detailed measures for reducing noise levels at noise sensitive receivers within 0.5 mile of the Potential Sites.

| |
|--|
| Threshold: Would the Project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? |
|--|

Impact NOI-2 CONSTRUCTION VIBRATION LEVELS WOULD NOT EXCEED LEVELS THAT ARE COMMONLY APPLIED FOR HUMAN ANNOYANCE OR STRUCTURE DAMAGE. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Construction related groundborne vibration levels associated with the proposed project would be largely associated with the operation of off-road equipment (e.g., vibratory rollers, hoe rams, bulldozers, trucks, and jackhammers). The use of pile drivers would not be required for this Project.

Groundborne vibration levels associated with construction equipment generally range from approximately 0.003 to 0.210 in/sec ppv at 25 feet.

The nearest existing structures include Noel's Automotive, which is located approximately 53 feet southwest of the proposed bridge, and Rio Theater, which is located approximately 116 feet north of the existing bridge. Predicted groundborne vibration levels at these nearest structures were quantified based on these distances and the reference noise levels identified in Table 4.13-7.

The greatest anticipated source of vibration during general construction activities would be from road construction and paving activities. The nearest structures, described above, would be exposed to construction vibration levels at approximately 0.15 in/sec PPV. This would be lower than what is considered a distinctly perceptible impact for humans of 0.24 in/sec PPV, and the structural damage impact of 0.4 in/sec PPV. Furthermore, these impacts would be temporary. Therefore, impacts associated with vibration from the Project construction would be less than significant.

The operation of the new bridge would not involve substantial vibration sources associated with operation. Therefore, operational vibration impacts of the Project would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?

For a project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?

Impact NOI-3 THE PROJECT IS NOT LOCATED WITHIN TWO MILES OF AN AIRSTRIP OR AIRPORT OR WITHIN THE NOISE CONTOURS FOR AN AIRSTRIP OR AIRPORT, AND NO IMPACTS WOULD OCCUR FROM EXPOSING RESIDENTS OR WORKERS TO EXCESSIVE AIRCRAFT NOISE LEVELS.

Airports located in Sonoma County include the Charles M. Schulz Sonoma County Airport, the Cloverdale Municipal Airport, the Healdsburg Municipal Airport, the Petaluma Municipal Airport, the Sonoma Skypark Airport, and the Sonoma Valley Airport. There are no private airstrips in the Project area. The Air Transportation Element of the County General Plan contains noise contour maps from 55 to 75 CNEL for each airport. None of the noise contours overlap with the Project site. Therefore, no substantial noise exposure from airport noise would occur to construction workers or residents in the Project area, and no impacts would occur.

4.13.4 Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

No impact would occur and mitigation is not required.

4.13.5 Cumulative Impacts

Short-Term Cumulative Construction Phase Impacts

Noise and vibration associated with construction using general equipment, drilling rig, concrete saws and/or breakers, could result in significant noise impacts if conducted between the hours of 10 p.m. to 7 a.m. Mitigation measures have been identified to help reduce noise from construction equipment. In addition, as with general construction activities, these impacts are typically considered localized impacts, affecting only receptors closest to construction activities. Therefore, unless construction of cumulative projects occur in close proximity to each other (i.e., less than 200 feet), and simultaneously, noise and vibration from individual construction projects have a small chance of combining to create significant cumulative impacts. There are no known projects planned or any other construction activities known by the County within 200 feet of the Project Site anticipated to occur at the same time as the proposed Project. Thus, with mitigation cumulative noise and vibration impacts from drilling, concrete saw cutting or breakers activities would be less than significant.

Long-Term Cumulative Operational Noise Impacts

As discussed in Impact NOI-1, traffic noise increases after completion of the Project would be negligible and would not contribute to a noise level increase that exceeds impact criteria, including under future cumulative conditions. Even though traffic may gradually increase over the course of operation of the Project, the contribution would not be cumulatively considerable.

Therefore, the incremental effect of the Project would not be cumulatively considerable.

This page intentionally left blank.

Population and Housing Table of Contents

| | | |
|--------|------------------------------|--------|
| 4.14 | Population and Housing | 4.14-1 |
| 4.14.1 | Setting..... | 4.14-1 |
| 4.14.2 | Regulatory Setting | 4.14-4 |
| 4.14.3 | Impact Analysis | 4.14-7 |
| 4.14.4 | Cumulative Impacts..... | 4.14-8 |

Tables

| | | |
|--------------|--|--------|
| Table 4.14-1 | Population in Unincorporated Sonoma County (2010 – 2019) | 4.14-1 |
| Table 4.14-2 | Households in Unincorporated Sonoma County and the Rest of Sonoma County (as a Whole)..... | 4.14-2 |
| Table 4.14-3 | Housing Units in Unincorporated Sonoma County Defined by Units Per Structure | 4.14-3 |
| Table 4.14-4 | Unincorporated Sonoma County 2019 Population, Housing, and Employment and 2040 Projections | 4.14-3 |
| Table 4.14-5 | Unincorporated Sonoma County Regional Housing Needs Assessment | 4.14-5 |

4.14 Population and Housing

This section evaluates the potential population growth and displacement impacts associated with project implementation.

4.14.1 Setting

Population, housing, and employment data are available on a city/town, county, regional, and state level. This Project EIR uses data collected and provided at the town and county level to focus the analysis specifically on unincorporated Sonoma County.

a. Population

As shown in Table 4.14-1, unincorporated Sonoma County had an estimated 2019 population of 141,781 (California Department of Finance [DOF] 2019). Table 4.14-1 also shows population growth in the unincorporated county since census year 2010. Between 2010 and 2017, the unincorporated county experienced a population increase, but in 2018 and 2019, the population of the unincorporated county decreased. This is likely due to the annexation of 714 acres of the unincorporated county into the city of Santa Rosa in October 2017, subsequent annexations of smaller tracts of land in 2018 and 2019 into other incorporated cities in Sonoma County, as well as the loss of population following the 2017 Sonoma Complex Fires and the 2019 Kincadee Fires (County of Sonoma 2020a).

Table 4.14-1 Population in Unincorporated Sonoma County (2010 – 2019)

| Year | Population | Percent Change from Previous Year |
|------|------------|-----------------------------------|
| 2010 | 145,363 | -- |
| 2011 | 146,530 | + 0.80 |
| 2012 | 147,158 | + 0.43 |
| 2013 | 147,330 | + 0.12 |
| 2014 | 148,487 | + 0.79 |
| 2015 | 149,229 | + 0.50 |
| 2016 | 149,488 | + 0.17 |
| 2017 | 149,781 | + 0.20 |
| 2018 | 143,721 | - 4.05 |
| 2019 | 141,781 | - 1.35 |

Source: DOF 2019

b. Housing

A household is defined as a group of people who occupy a housing unit (United States Census Bureau 2020). A household differs from a dwelling unit because total dwelling units includes both occupied and vacant dwelling units. Not all the population lives in households; a portion lives in group quarters, such as board and care facilities and others are homeless.

Household Size

Small households (one to two persons per household) traditionally occupy units with zero to two bedrooms; family households (three to four persons per household) normally occupy units with three to four bedrooms. Large households (five or more persons per household) typically occupy units with four or more bedrooms. The number of units in relation to the household size may reflect preference and economics. Many small households obtain larger units and some large households live in small units, for economic reasons.

Table 4.14-2 compares the size of households in the unincorporated county with Sonoma County as a whole, in 2000, 2010, and 2019. The average household size in the unincorporated county and Sonoma County as a whole decreased between 2000 and 2010 and increased between 2010 and 2019. Overall, the unincorporated county has maintained a lower average household size than Sonoma County as a whole over the last 19 years.

Table 4.14-2 Households in Unincorporated Sonoma County and the Rest of Sonoma County (as a Whole)

| | | | |
|---|------|------|------|
| Unincorporated County | 2.57 | 2.46 | 2.53 |
| Rest of Sonoma County (incorporated cities) | 2.60 | 2.55 | 2.63 |

Source: DOF 2007, DOF 2019

Housing Units

Table 4.14-3 shows the growth in number of housing units in the unincorporated county since 2000. Between 2000 and 2010, approximately 2,701 housing units were added to the housing inventory in the unincorporated county, an average yearly increase in the housing stock of approximately 245 housing units. Between 2010 and 2019, approximately 2,884 housing units were removed from the housing inventory in unincorporated county areas, an average yearly decrease of approximately 288 units. Similar to the decrease in population in the unincorporated county during this time, this decrease in housing units is likely due either to annexations of land previously in the unincorporated county into various incorporated cities in Sonoma County or to the 2017 Sonoma Complex Fires, which destroyed over 2,200 housing units in the unincorporated county (County of Sonoma 2020b). Additionally, it should be noted that the 2019 Kincade Fire destroyed 374 structures, including 174 residences, and damaged 60 additional structures, including 34 residences (California Department of Forestry and Fire Protection [CAL FIRE] 2019); the Glass Fire of 2020, which destroyed 1,555 structures and damaged an additional 282 structures across both Napa and Sonoma counties (CAL FIRE 2020); and the LNU Lightning Complex fires of 2020, which destroyed 159 residences and damaged an additional 10 residences in Sonoma County (Graff 2020). Of the 64,807 housing units in the unincorporated county in 2019, 10,769 units (16.6 percent) were vacant (DOF 2019). There were 1,904 permitted vacation rentals in the County as of June 23, 2020 (County of Sonoma 2020c).

Table 4.14-3 Housing Units in Unincorporated Sonoma County Defined by Units Per Structure

| Year | Single Family (Attached Plus Detached) | Multifamily (2 to 4 units) | Multifamily (5+ units) | Mobile Homes | Total Units | Occupied Units |
|------|--|----------------------------|------------------------|--------------|-------------|----------------|
| 2000 | 55,592 | 5,984 ^a | — ^a | 5,958 | 67,534 | 59,399 |
| 2010 | 58,293 | 2,607 | 2,425 | 4,642 | 67,967 | 56,951 |
| 2019 | 55,409 | 2,619 | 2,364 | 4,415 | 64,807 | 54,038 |

^a This number represents all multi-family housing in the unincorporated county in 2000, without regard to the number of units in the multifamily complex (2 to 4 versus 5+ units).

Source: DOF 2007, 2019

c. Employment-Housing Ratio

The employment-household ratio in an area is an overall indicator of jobs availability in that area. A balance of jobs and housing is considered beneficial as it has the potential to provide residents the option to work locally and avoid commutes to other places in the region for employment. As shown in Table 4.14-4, the current (2019) employment in the unincorporated county is estimated to be 55,252 (Association of Bay Area Governments [ABAG] 2017). Based on this employment estimate and the unincorporated county’s estimated population, the unincorporated county’s current jobs-housing ratio is 0.85 jobs per household.

Table 4.14-4 Unincorporated Sonoma County 2019 Population, Housing, and Employment and 2040 Projections

| Unincorporated Sonoma County | 2019 | 2040 ^b | Change between 2019 to 2040 |
|------------------------------|----------------------|-------------------|-----------------------------|
| Population (# of residents) | 141,781 ^a | 160,150 | 18,369 |
| Housing (# of units) | 64,807 ^a | 68,747 | 3,940 |
| Employment (# of jobs) | 55,252 ^c | 61,595 | 6,343 |

^a Source: DOF 2019

^b Source: ABAG 2017

^c Source: ABAG 2017; extrapolated from 2015 and 2020 employment data

The County has also identified a shortage in high-density housing of approximately 20,700 units to accommodate projected household employment and to alleviate overcrowding that occurs in approximately six percent of existing housing units (County of Sonoma 2018).

d. Projections

Table 4.14-4 also presents 2040 population, housing, and employment projections for the unincorporated county. The 2040 projections are based on 2017 data ABAG provided (ABAG 2017), which suggest the unincorporated county’s population will grow by approximately 18,369 new residents, 3,940 new housing units, and 6,343 new jobs by 2040 compared to 2019 levels. This is equivalent to an average annual population growth rate of approximately 0.6 percent through the year 2040 and overall growth from 2019 to 2040 of 13 percent. Additionally, it should be noted that the 2040 ABAG projections did not account for recent events that have reduced the County’s housing stock, including the 2017 Sonoma Complex fires (destruction of over 2,200 housing units); 2019 Kincade Fire (destruction of 374 structures, including 174 residences, and damage to 60

additional structures, including 34 residences); the Glass Fire of 2020 (destruction of 1,555 structures and damage to an additional 282 structures across both Napa and Sonoma counties); and the LNU Lightning Complex fires (destruction of 159 residences and damage to an additional 10 residences in Sonoma County (County of Sonoma 2020b; CAL FIRE 2019, 2020; Graff 2020).

4.14.2 Regulatory Setting

a. State Regulations

State Housing Element Law

State housing element statutes (Government Code Sections 65580 through 65589.11) mandate that local governments adequately plan to meet the existing and projected housing needs of all economic segments of the community. The law recognizes that for the private market to adequately address housing needs and demand, local governments must adopt land use plans and regulatory systems that provide opportunities for, and do not unduly constrain, housing development. As a result, State housing policy rests largely upon the effective implementation of local general plans and, in particular, housing elements. Additionally, Government Code Section 65588 dictates that housing elements must be updated at least once every eight years. The County of Sonoma maintains a Housing Element associated with the County's General Plan, which is described below and addresses housing affordability, including Regional Housing Needs Assessment (RHNA) goals.

b. Regional and Local Regulations

Association of Bay Area Governments Regional Transportation Plan/Sustainable Communities Strategy

As discussed in Section 4.11, *Land Use and Planning*, Sonoma County is in the ABAG/Metropolitan Transportation Commission (MTC) planning area. ABAG/MTC functions as the Metropolitan Planning Organization for Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties and the towns and cities in those counties. ABAG/MTC is responsible for implementing Plan Bay Area, the Regional Transportation Plan/Sustainable Communities Strategy (ABAG 2017). Plan Bay Area is a long-range integrated transportation and land-use plan for the San Francisco Bay Area through 2040. ABAG/MTC projections for the planning area consider regional, State, and national economic trends and planning policies. ABAG/MTC's 2040 population and housing projections for unincorporated Sonoma County are shown in Table 4.14-4.

Regional Housing Needs Assessment

California's Housing Element law requires that each county and city develop local housing programs to meet their "fair share" of future housing growth needs for all income groups, as determined by the Department of Housing and Community Development. The regional councils of government, including ABAG, are then tasked with distributing the State-projected housing growth need for their region among their city and county jurisdictions by income category. This fair share allocation is referred to as the RHNA process. The RHNA determines the minimum number of housing units each community is required to plan for through a combination of 1) zoning "adequate sites" at suitable densities to provide affordability; and 2) housing programs to support production of below-market rate units. The allocation for areas in unincorporated Sonoma County as determined by the 2015-

2023 RHNA, distributed among four income categories, is shown in Table 4.14-5. The 2024-2032 RHNA process is underway, and the adopted draft numbers are also provided in Table 4.14-5.

Table 4.14-5 Unincorporated Sonoma County Regional Housing Needs Assessment

| Income Group | 2015-2023 RHNA Allocation (units) | Percent of Total | 2024-2032 RHNA Allocation (units) | Percent of Total |
|--|-----------------------------------|------------------|-----------------------------------|------------------|
| Very Low: up to 50 percent of area median income | 126 | 24.5 | 1,036 | 26.7 |
| Low: between 51 and 80 percent of area median income | 37 | 7.2 | 596 | 15.4 |
| Moderate: between 81 and 120 percent of area median income | 160 | 31.1 | 627 | 16.2 |
| Above Moderate | 192 | 37.3 | 1,622 | 41.8 |
| Total | 515 | 100.0 | 3,881 | 100.0 |

Note: Numbers may not add to provided total due to rounding.

Source: ABAG 2013, 2021

Sonoma County Transportation Authority

The Sonoma County Transportation Authority (SCTA) serves as the coordinating and advocacy agency for transportation funding for Sonoma County. The SCTA acts as the countywide planning and programming agency for transportation related issues. The SCTA plays a leading role in transportation by securing funds, providing project oversight, and initiating long-term planning. To comply with the MTC requirement that local transportation agencies establish transportation plans that can feed into the larger Regional Transportation Plan, SCTA prepared Moving Forward 2040 — the Comprehensive Transportation Plan in September 2016. This comprehensive transportation plan uses ABAG, MTC, DOF, and California Economic Development Department data to forecast future population, housing, and employment in Sonoma County and the cities therein, through 2040. Moving Forward 2040 estimates that population in the county as a whole (including both unincorporated and incorporated areas) is projected to grow by approximately 23 percent from 2010 to 2040. This is consistent with the ABAG population projections.

Sonoma County Housing Element

The Housing Element is one of the State-required elements of the General Plan. The County adopted its most recent Housing Element in December 2014 and will generate another update by 2023, at which point the element will be revised for compliance with Division 1, Title 2, Chapter 15 of the Government Code, added by Assembly Bill (AB) 686 in September 2018, which requires housing elements to contain an Assessment of Fair Housing consistent with the federal Affirmatively Furthering Fair Housing Final Rule of July 16, 2015. The purpose of the Housing Element is to identify and analyze existing and projected housing needs to preserve, improve, and develop housing for all economic segments of the community. The Housing Element consists of four parts: an introduction; the County’s housing goals, objectives, policies, and action programs; a detailed housing inventory; and the Technical Background Report.

Housing Element goals and policies are intended to preserve affordable units and prevent displacement in the county as follows:

Goal H-1: Sustain existing affordable housing programs and affordable units.

Policy HE-1c: Ensure that design review, development standards, and conditions of approval for affordable housing projects do not result in a reduction of allowable project density, or in the number of affordable units, unless the project as proposed would result in one or more specific adverse impacts on public health or safety, and there is no other feasible method to mitigate the adverse impact(s).

Policy HE-1j: Avoid the loss of residential land in urban land-use designations for vacation or time-share uses.

Goal H-2: Promote the use of available sites for affordable housing construction and provide adequate infrastructure.

Policy HE-2a: Publish a popular summary that identifies available housing opportunity sites in the unincorporated County. Provide site-specific development information and support for development proposals whenever possible in order to reduce up-front costs for interested housing developers.

Policy HE-2f: Consider a variety of sites for higher-density and affordable housing when the following criteria are met:

- 1) Site is located within or adjacent to an Urban Service Area (USA)
- 2) Adequate utilities are available
- 3) Site is located within 0.5 mile to goods, services, and transit
- 4) Project is consistent with the land use policies of the General Plan

Policy HE-2j: Prevent the loss of urban housing sites to visitor-serving uses.

Goal H-3: Promote production of affordable housing units.

Policy HE-3b: Continue to allow manufactured homes on any residential lot, in compliance with state law and subject to all other County Codes.

Policy HE-3e: Continue to allow small-scale homeless shelters (10 persons or less) in the C3, LC and M1 districts as a permitted use, subject to the adopted standards (26.88.127, Homeless Shelters).

Policy HE-3f: Continue to allow emergency homeless shelters (more than 10 persons) in the M1 and PF zoning districts as a permitted use, subject to the adopted standards (26.88.127, Homeless Shelters).

Policy HE-3i: Promote the construction and retention of shared housing such as group homes, congregate care facilities and residential community care facilities while ensuring the health and safety of residents and ensuring land use compatibility for neighbors.

Policy HE-3j: Continue to encourage affordable "infill" projects on underutilized sites within Urban Service Areas by allowing flexibility in development standards pursuant to state density bonus law (Government Code 65915).

Policy HE-3k: Continue to apply the minimum residential density policy to all Urban Residential parcels.

Goal H-4: Continue to provide funding for affordable housing.

Policy HE-4d: Identify County-owned lands suitable for housing and consider leasing such land to developers or nonprofit housing entities for the production of affordable housing. In cases where surplus county land is available, consider making lands available for affordable or special needs housing and associated services, including transitional and farmworker housing.

Goal H-5: Promote production of housing units for special needs.

Policy HE-5a: Periodically review and revise zoning regulations for group homes, transitional housing, permanent support housing, and the full range of licensed healthcare programs and facilities to encourage additional use of residences or construction of new facilities for these purposes.

Policy HE-5c: Continue to encourage small-scale homeless shelters (10 persons or less) in the C3, LC and M1 districts.

Policy HE-5d: Continue to encourage emergency homeless shelters (more than 10 persons) in the M1 and PF zoning districts.

Policy HE-5g: Continue to permit transitional and permanent supportive housing in all residential land use categories. The construction of new dwellings for such purposes shall conform to the General Plan densities and to all other applicable provisions of the Sonoma County Code. No standards shall be applied to transitional or supportive housing that do not also apply to other dwelling units within the same zoning district.

4.14.3 Impact Analysis

a. Methodology and Thresholds of Significance

The following thresholds are based on *CEQA Guidelines* Appendix G. For purposes of this EIR, impacts related to population and housing are considered significant if implementation of the proposed project would:

1. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)
2. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere

For purposes of this analysis, “substantial” population growth is defined as growth exceeding ABAG or SCTA population forecasts for the unincorporated county or exceeding the County’s identified population and housing needs. “Substantial” displacement would occur if allowed land uses would displace more residents than would be accommodated through growth provided by project implementation.

b. Project Impacts and Mitigation Measures

| |
|--|
| Threshold: Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? |
|--|

Impact PH-1 THE PROJECT WILL REPLACE THE EXISTING BRIDGE OVER THE RUSSIAN RIVER. NO NEW HOUSING WOULD BE FACILITATED BY THE PROJECT THAT IS NOT FACILITATED BY THE CURRENT BRIDGE. REPLACEMENT OF THE BRIDGE WILL NOT INCREASE THE ROADWAY CAPACITY OF THE BOHEMIAN HIGHWAY. THERE WOULD BE NO IMPACT.

The project would replace the existing Bohemian Highway Bridge over the Russian River in Monte Rio. This is not considered a growth inducing activity, the roadway capacity of the Bohemian

Highway will not change as a result of the Project. No new development for housing is required or planned as part of the construction or operation of the new bridge.

Mitigation Measures

No mitigation measures would be required.

Significance after Mitigation

No impact would occur, and mitigation is not required.

| |
|--|
| Threshold: Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? |
|--|

Impact PH-2 THE PROJECT WOULD NOT DISPLACE EXISTING HOUSING OR PEOPLE. THEREFORE THE CONSTRUCTION OF REPLACEMENT HOUSING ELSEWHERE WILL NOT BE NECESSARY. THERE WOULD BE NO IMPACT.

There will be some temporary and permanent acquisitions required to facilitate construction and operation of the project. Right-of-way acquisitions, temporary or permanent, will not result in the displacement of existing housing or people. Therefore, construction of replacement housing elsewhere will not be required.

Mitigation Measure

No mitigation measures would be required.

Significance After Mitigation

No Impact

4.14.4 Cumulative Impacts

A project's environmental impacts are "cumulatively considerable" if the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (*CEQA Guidelines* Section 15065[a][3]). The geographic scope for cumulative population and housing impacts is the project area. There would be no cumulative impacts to population or housing because of the project will have no impact on housing. Replacement of the existing bridge will not change the baseline condition's impacts to population and housing. Further, the capacity of the bridge is limited to the capacity of the existing Bohemian Highway, as that roadway will remain unchanged beyond the bridge and the bridge approaches. No recent past project or future housing projects are known to occur within the project area. Future projects would be subject to CEQA, including consideration of whether the projects would displace people or residences, and require mitigation of impacts. With these considerations prior to project approval, cumulative impacts related to the displacement of people or residences would be less than significant.

This page intentionally left blank.

Public Services and Recreation Table of Contents

| | | |
|--------|--------------------------------------|---------|
| 4.15 | Public Services and Recreation | 4.15-1 |
| 4.15.1 | Setting..... | 4.15-1 |
| 4.15.2 | Regulatory Setting | 4.15-6 |
| 4.15.3 | Impact Analysis | 4.15-9 |
| 4.15.4 | Cumulative Impacts | 4.15-18 |

Tables

| | | |
|--------------|-----------------------|--------|
| Table 4.15-2 | Enrollment Data | 4.15-2 |
|--------------|-----------------------|--------|

4.15 Public Services and Recreation

This section assesses impacts associated with public services, including fire and police protection, public schools, libraries, and parks and recreation associated with project implementation. Impacts to water and wastewater infrastructure and solid waste collection and disposal are discussed in Section 4.18, *Utilities and Service Systems*. Impacts regarding wildland fires are discussed in Section 4.19, *Wildfire*.

4.15.1 Setting

a. Fire Protection

Fire protection, first response emergency medical services, and natural disaster preparedness services in unincorporated Sonoma County are provided by various fire departments. The Project Site is served by the Monte Rio Fire Protection District (MRFPD), which has a station located less than 1,000 feet from the existing bridge.

Fire protection districts are funded by County taxes and operated by the Fire Division of the Sonoma County Department of Emergency Services (Sonoma Local Agency Formation Commission 2013). Volunteer fire companies are funded primarily through donations, with equipment and administrative support provided by the County Department of Emergency Services (Wilmar Volunteer Fire Department 2020).

Response Times

The National Fire Protection Association Code Section 1720, Chapter 4, establishes response time goals for areas, based on the urbanization of the response location. For urban areas (more than 1,000 people per square mile), 80 percent of response times should be no longer than nine minutes; for suburban areas (500 to 1,000 people per square mile) the response time should be no more than 10 minutes, and for rural areas (less than 500 people per square mile) the response time should be no more than 14 minutes. For remote areas with a travel distance greater than 8 miles, the response time correlates directly to the travel distance. The MRFPD' response zone is rural.

Wildland Fire Hazards

In California, responsibility for wildfire prevention and suppression is shared by federal, state, and local agencies. As shown in Section 4.19, *Wildfire*, the project site is located in a moderate fire hazard severity zone, surrounded by a high zone in the State Responsibility Areas (SRA). Section 4.19, *Wildfire*, also provides a description of nearby vegetation and wildfire risk associated with the project site.

The State of California utilizes a Mutual Aid system to support any disaster that impacts a community, such a wildfire. Once a request is made, the California Emergency Management Agency contacts counties throughout California to assemble strike teams of fire engines and personnel to respond to the need. Section 4.19, *Wildfire*, addresses regulations and potential impacts related to wildfire, including smoke and subsequent flooding and runoff.

California Department of Forestry and Fire Protection

Preventing wildfires in the SRA is a vital part of the California Department of Forestry and Fire Protection (CAL FIRE) mission. CAL FIRE's Fire Prevention Program consists of multiple activities including wildland pre-fire engineering, vegetation management, fire planning, education, and law enforcement. Typical fire prevention projects include brush clearance, prescribed burns, defensible space inspections, emergency evacuation planning, fire prevention education, fire hazard severity mapping, and fire-related law enforcement activities (CAL FIRE 2020). CAL FIRE also responds to medical aids, hazardous material spills, swift water rescues, search and rescue missions, civil disturbances, train wrecks, floods, earthquakes, and other emergency calls.

b. Law Enforcement Protection

The County Sheriff's Office provides police protection in the unincorporated county. The Sheriff's Office is located at 2796 Ventura Avenue in Santa Rosa, with the nearest substations to the Project in Guerneville. The Guerneville substation is located at 16225 First Street in Guerneville, approximately 4 miles from the project location. The County Sheriff's Office had 634.5 allocated staff and 95 extra help staff for fiscal year 2018/2019 and serves a population of approximately 500,000 people. This results in a service ratio of 1.46 per 1,000 residents.

The California Highway Patrol provides traffic safety and enforcement services on unincorporated roadways and State highways. One California Highway Patrol office is located along Highway 101 in Rohnert Park.

c. Emergency Medical Services

Emergency medical services (EMS) within the County are provided by first responder agencies, ground and air ambulance providers, the REDCOM Fire & EMS Dispatch Center, and eight acute care hospitals. Ambulances are provided by an Exclusive Operating Area (EOA) ambulance franchise, assessment district ambulance providers, fire department based ambulance providers, private ambulance providers, a private helicopter ambulance service, and a law enforcement based ALS rescue helicopter. Emergency calls are routed to the central REDCOM Dispatch Center, which dispatches ambulance services to the project area (Sonoma County 2006).

d. Schools

The Monte Rio Union School and West Sonoma County Union High School serve the Monte Rio community. Enrollment data and projected enrollment data, per the California Department of Finance's data, are shown in table 4.15-2.

Table 4.15-1 Enrollment Data

| School District | Enrollment Data (2018-19) (number of students) | Projected Enrollment (2028-29) (number of students) |
|-------------------------------|---|--|
| Guerneville Elementary | 1,341 | 1,134 |
| West Sonoma County Union High | 1,933 | 1,638 |

Notes: Projected Enrollment is calculated assuming a 15.43 percent decrease in enrollment between 2018-29 and 2028-29 in the County (DOF 2020). The actual change in projected enrollment for each district may vary, with an overall average of less 15.43 percent. Data from the DOF was provided at the County level and not at the School District level.

Source: Sonoma County Office of Education 2020

e. Public Libraries

Sonoma County has a centralized regional library system operated as the Sonoma County Library under a Joint Powers Agreement from 1975. The Joint Powers Agreement is between Sonoma County, the incorporated cities of Sonoma County, and the Sonoma County Library. The Library Commission governs the library system and is appointed by the Sonoma County Board of Supervisors, and the cities of Santa Rosa and Petaluma. There are 15 branch libraries: Santa Rosa Central, Cloverdale Regional, Forestville (El Molino High School), Guerneville Regional, Healdsburg Regional, Occidental, Petaluma Regional, Rohnert Park-Cotati Regional, Roseland Community, Santa Rosa Northwest Regional, Sonoma County History and Genealogy, Rincon Valley Regional, Sebastopol Regional, Sonoma Valley Regional, and Windsor. The project site is located 4.5 miles from the nearest library – the Guerneville Library.

The mission of the Sonoma County Library system is to bring information, ideas, and people together to build a stronger community. The system is known nationally for their innovation and locally for their connection to their residents and communities. Their Strategic Plan is broken down into five Components: Customer Experience, Education and Discovery, Innovation, Community Engagement, and Financial Sustainability (Sonoma County Library 2015). During the November 2016 election, 72 percent of the voters in Sonoma County voted to support Sonoma County Library by passing Measure Y to increase sales taxes by an eighth of a cent to maintain, restore, and enhance library services throughout the County.

f. Parks and Recreation

Monte Rio Recreational Park District

Park and recreation facilities adjacent to the project site include the beaches and parking lots that are primarily owned and maintained by the Monte Rio Recreational Park District (MRRPD), including MRRPD's Big Rocky, Sandy and Dutch Bill beaches. These public beaches are popular recreational destination sites for tourists and locals and include a food concession, boat rentals and restrooms.

The MRRPD was created under California Public Resources Code, Article 2, Chapter 3, Division 5 as a county recreation district and reorganized in 1960 under the revised State of California Public Resource Code, I Section 5780.11. The MRRPD was established with the mission of fostering and management of river oriented recreation and operation of the beach areas (MRRPD, 2006)

A public fishing access area known as the Monte Rio Fishing Access supports a boat ramp, restrooms and parking area adjacent to the existing bridge and is included in this evaluation. The Monte Rio Fishing Access is owned by the California Department and Fish and Wildlife (CDFW) and operated by MRRPD under a joint CDFW and MRRPD operating agreement.

The MRRPD encompasses an area of approximately 3.5 square miles and extends approximately along a two mile reach of the Russian River, with the existing Bohemian Highway Bridge bisecting many of the MRRPD properties. Recreational facilities of the MRRPD located at or adjacent to the Bohemian Highway Bridge include the Monte Rio Beaches, Monte Rio Fishing Access, Monte Rio Community Center, Koret Park; and the currently undeveloped parcels referred to as the River Boulevard and Main Street Sites, described in further detail below. Additional MRRPD facilities in

the general project vicinity include Riverfront Meadow, Creekside (Skate) Park; Monte Rio Amphitheater; Dutch Bill Creek Trail, several community gardens; and tennis and basketball courts

MRRPD Existing and Planned Facilities (Description, Location and Function) MRRPD beaches and facilities are used by seasonal and permanent residents as well as tourists. Summer events such as the 4th of July fireworks and Big Rocky Games (beach and water games), Memorial Day and Fire Department BBQs, car shows, and festivals bring large crowds to the beach area and MRRPD facilities. MRRPD facilities in the immediate project vicinity include:

- **Monte Rio Beaches** – Monte Rio Beach is the largest public beach on the lower Russian River. On the north side of the river, Big Rocky Beach (APN 094-110- 002) is located east of the Bridge and Sandy Beach (APN 094-110-001) is located west of the Bridge. Big Rocky Beach supports a summertime food concession and boat rental and is on the same parcel together with the Riverfront Meadow, an area used for daytime events, including weddings and festivals. An unimproved parking lot lies just north of Big Rocky Beach, in between the beach and Riverfront Meadow. Public restrooms with an accessibility ramp are available between the Big Rocky Beach parking area and Riverfront Meadow. Dutch Bill Beach (APN 095-160-001) is located on the south side of the Russian River.

- **Monte Rio Fishing Access** – The Monte Rio Fishing Access consists of a boat ramp, an American with Disabilities Act (ADA) access and parking spot adjacent to the boat ramp, an access road, and two sets of stairs on MRRPD lands (094- 100-046) together with a parking area located on State of California (Department of Fish and Wildlife [CDFW]) lands (APN 094-100-035). With the exception of a portion of the parking area on CDFW state lands, all of the Monte Rio Fishing Access amenities are on the same large (4.6 acre) MRRPD owned parcel together Monte Rio Community Center, Koret Park and Playground, and Public Restrooms described further below. The Monte Rio Fishing Access was constructed with Wildlife Conservation Board (WCB) funds in the 1950’s and improved several times, including improvements to the boat ramp in the 1970’s with Land and Water Conservation Fund Act (LWCFA) funds. The exact boundary of the improvements is unknown, although it appears improvements were limited to the “concrete boat launching ramp” itself (MRRPD, 2021, Caltrans 2021). Section 6(f) of the Department of Transportation Act prohibits the conversion of properties acquired or developed with LWCFA funds grants to a non-recreational purpose without prior approval from the Department of the Interior’s (DOI) National Park Service. However, the proposed project does not include any permanent or temporary uses of the concrete boat ramp and no coordination with DOI is anticipated for this project. The MRRPD has operated and maintained the Monte Rio Fishing Access facilities through an agreement with the State throughout most of the facilities’ existence. In 2005, the State of California, through CDFW, and MRRPD signed a fifteen (15) year “Operating Agreement for Monte Rio Fishing Access.” This agreement expired in 2020. CDFW and MRRPD are currently in coordination on a new agreement.

- **Monte Rio Community Center and Koret Park and Playground-** The Community Center provides a central meeting location for the community and also is rented out as a venue for weddings and other private events. The Center includes large and small meeting rooms, restrooms, a landscaped patio area, and a commercial kitchen. There are ADA and standard parking spaces located in front of the building. Koret Park is just west of the Community Center and includes a play structure and picnic tables. An outdoor public restroom is located between the Monte Rio Fishing Access parking area and Koret Park. The Community Center and its parking area, Koret Park and Playground, Monte Rio Fishing Access, and the outdoor

restrooms are all on the same parcel (094-100-046) (with the exception of the portion of the Monte Rio Fishing Access parking area on State/CDFW lands [004-100-035]).

- **Riverfront Meadow** – Riverfront Meadow is located at the east end of Big Rocky Beach. This area is suitable for daytime events, and can be rented for weddings and festivals. It is the same parcel as Big Rocky Beach (APN 094-110-002). An accessibility ramp is available from the parking lot between Big Rocky Beach and Riverfront Meadow up to the public restrooms that are located on the edge of the Riverfront Meadow.
- **River Boulevard and Main Street Sites** – The River Boulevard and Main Street Site is composed of two unimproved parcels on the south end of the bridge, one on the east side (APN 095-170-020) and one on the west (APN 095-160-007). The properties currently have no specified use, however there are conceptual plans to develop them as a future camping area, with campsites accessible by boat, bikes, vehicles and on-foot via a connection with the conceptual plans for a Dutch Bill Creek Trail continuation. Additional amenities proposed include day use picnic areas and park shelter.

Access and Usage - Access to the MRRPD facilities is by private vehicles, public bus, walking, boating, swimming, and bikes. Parking is provided at multiple locations, including the Monte Rio Fishing Access parking area, in front of the Community Center, and in the large unimproved parking area adjacent to Big Rocky Beach.

Vehicle and pedestrian access to the MRRPD beaches on the north side of the river is provided through the Monte Rio Fishing Access parking area and access road, directly to the west of the northern bridge approach. The Monte Rio Fishing Access, access road crosses under the existing bridge and leads to the parking lot adjacent to Big Rocky Beach east of the existing bridge. There is a smaller parking area immediately in front of the MRRPD Community Center, separated from the larger Monte Rio Fishing Access parking lot by public restrooms and landscaping.

Another access road located at the east end of the Big Rocky Beach parking lot connects to E Street, and then SR 116. The E street access road is closed to vehicles with a locked gate and generally available only for pedestrians. The gate is opened for vehicles exiting the parking lot during large public events, such as the Fourth of July fireworks at the beach. Access to Dutch Bill Beach on the south side of the bridge is through an unimproved footpath next to Noel's Automotive on Main Street. This access is also used for emergency vehicles to reach the beach.

Upon County request for estimated number of beach users, MRRPD provided the County with its most recent (2019) records of boat rentals (MRRPD, 2021). During the 2019 summer season, there were approximately 1,758 boat rentals. However, since many visitors use the beach without renting boats, and one boat rental may be for more than one person, it is estimated that beach use is higher than boat rental records show, especially during holiday weekends and for special community events and gatherings such as Fourth of July when there are large crowds.

Relationship to Similarly used Lands in the Vicinity - Similarly used lands in the area include public and private beaches along the Russian River between the towns of Forestville and Jenner. These include numerous Sonoma County Regional Park beaches (Steelhead Beach, Forestville River Access, Sunset Beach River Park, and Guerneville River Park), the privately owned Johnson's Beach and many undeveloped beach areas that are accessed through public trail easements.

Unusual Characteristics of the Property that Enhance or Reduce its Value – Unlike other developed beaches in the vicinity, there is no charge to park at MRRPD beaches or facilities. The beach offers a unique public beach experience with boat rental, food concessions and developed restroom

facilities not available at other public beaches in the area. The existing bridge's piers are located in the river channel, which create scour pools, a potential safety issue for swimmers that is not an issue for other nearby beaches. The existing bridge structure and piers currently separate Big Rocky and Sandy beaches.

California State Lands Commission

Additional public access to the beaches is held in trust by the California State Lands Commission (CSLC). The public has a general right to access and enjoy California's navigable waterways at any point below the high water mark. The CSLC has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways. The CSLC also has certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions (PRC 6301 and 6306). All tidelands and submerged lands, granted or ungranted, as well as navigable lakes and waterways, are subject to protections of the Common Law Public Trust.

The State of California acquired ownership of all tidelands and submerged lands and beds of navigable lakes and waterways upon its admission into the United States in 1850. These lands are held by the State for the benefit of all people for statewide Public Trust purposes. The State's ownership extends on navigable non-tidal waterways to the ordinary low water mark, and on tidal waterways, ownership extends landward to the mean high tide line, except for areas of fill or artificially accretion, or where the boundary has been fixed by agreement or a court. Based on 2016 correspondence with the CSLC, the Russian River is considered a tidal, navigable waterway at the project location. The Russian River at the project site includes State-owned sovereign land. Public access to the Russian River will be maintained throughout construction.

4.15.2 Regulatory Setting

a. Federal Regulations

Disaster Mitigation Act

Section 104 of the Disaster Mitigation Act (DMA) of 2000 (Public Law 106-390) requires a state mitigation plan as a condition of disaster assistance. There are two different levels of state disaster plans: Standard and Enhanced. States that develop an approved Enhanced State Plan can increase the amount of funding available through the Hazard Mitigation Grant Program. The Act has also established new requirements for local mitigation plans.

Sonoma County prepared a hazard mitigation plan in compliance with the DMA in 2006 and has updated the plan every five years since then, most recently in 2016. The County and its multijurisdictional partners are currently preparing an updated hazard mitigation plan. The Public Review Draft of the Sonoma County Multijurisdictional Hazard Mitigation Plan Update 2021 was published in July 2021.

The Sonoma County Multijurisdictional Hazard Mitigation Plan Update 2021 defines measures to reduce risks from natural disasters in the Sonoma County. Operational Area, which consists of the entire county, including unincorporated areas, incorporated cities, and special purpose districts. The plan complies with federal and state hazard mitigation planning requirements to establish eligibility for funding under Federal Emergency Management Agency (FEMA) grant programs for all planning

partners. It updates the County's previous plan, the 2016 Sonoma County Operational Area Hazard Mitigation Plan.

National Fire Plan

The National Fire Plan was developed under Executive Order 11246 in August 2000, following a landmark wildland fire season. Its intent is to actively respond to severe wildland fires and their impacts to communities, while ensuring sufficient firefighting capacity for the future. The plan addresses firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability.

b. State Regulations

California Fire Plan

The Strategic California Fire Plan is the State's roadmap for reducing the risk of wildfire. The plan was updated in 2012 and directs each CAL FIRE unit to prepare a locally specific Fire Management Plan for its area of responsibility. These documents assess the fire situation in each of CAL FIRE's 21 units and six contract counties. The plans include stakeholder contributions and priorities and identify strategic areas for pre-fire planning and fuel treatment, as defined by the people who live and work with the local fire problem. The plans are required to be updated annually.

California State Hazard Mitigation Plan

The purpose of the State of California Multi-Hazard Mitigation Plan (SHMP) is to significantly reduce deaths, injuries, and other losses attributed to natural and human-caused hazards in California. The SHMP provides guidance for hazard mitigation activities emphasizing partnerships among local, state, and federal agencies as well as the private sector. The California Office of Emergency Services prepares the SHMP, and in it identifies risks and includes a vulnerability analysis and a hazard mitigation strategy. The SHMP is federally required under the Disaster Mitigation Act of 2000 for the state to receive federal funding.

The 2018 California SHMP represents the state's primary hazard mitigation document and provides an updated analysis of the state's historical and current hazards, hazard mitigation goals and objectives and hazard mitigation strategies and actions. FEMA approved California's 2018 SHM on September 28, 2018.

c. Regional and Local Regulations

County General Plan

The Sonoma County General Plan was adopted by the Sonoma County Board of Supervisors Resolution 08-0808 on September 23, 2008, and includes broad goals and policies intended to ensure the safety of county residents and ensure adequate provision of public facilities and services to serve the existing and projected county population. Goals and policies from the General Plan are provided below.

Public Facilities and Services Element Goals and Policies

Goal PF-2: Assure that park and recreation, public education, fire suppression and emergency medical, and solid waste services, and public utility sites are available to the meet future needs of Sonoma County residents.

Objective PF-2.6: Integrate fire protection systems into new structures as a means of improving fire protection services through adoption of a County ordinance.

Policy PF-2a: Plan, design, and construct park and recreation, fire and emergency medical, public education, and solid waste services and public utilities in accordance with projected growth, except as provided in Policy LU-4d.

Policy PF-2b: Work with the Cities to provide park and recreation, public education, fire and emergency medical, and solid waste services as well as public utilities. Use proposed annexations, redevelopment agreements, revenue sharing agreements, and the CEQA process as tools to ensure that incorporated development pay its fair share toward provision of these services.

Policy PF-2c: Use the following standards for determination of park needs: Twenty acres of regional parks per 1,000 residents countywide and five acres of local and community parks per 1,000 residents in unincorporated areas. A portion of State parklands may be included to meet the standard for regional parks.

Policy PF-2f: Adopt and implement a new Outdoor Recreation Plan with parks and recreation facilities necessary to meet the needs of GP2020.

Policy PF-2g: Require dedication of land or in-lieu fees as a means of funding park and fire services and facilities.

Policy PF-2i: Continue to implement State law pertaining to school impact mitigation that allows for the dedication of land, the payment of fees, or both, as a condition of approval for development projects.

Policy PF-2m: Prepare a Fire Services Master Plan for urban and rural areas in cooperation with the Cities, State, and other fire service agencies. The minimum contents necessary for an adequate master plan are:

1. A statement of objectives, policies and programs,
2. A forecast of growth,
3. Projected fire and emergency medical service needs, and
4. A level of service assessment

Policy PF-2x: Utilize development fees to require that new development pay for its share of needed infrastructure as identified in existing and future Capital Improvement Plans prepared by the County.

Goal PS-3: Prevent unnecessary exposure of people and property to risks of damage or injury from wildland and structural fires.

Policy PS-3b: Consider the severity of natural fire hazards, potential damage from wildland and structural fires, adequacy of fire protection and mitigation measures consistent with the Public Safety Element in the review of projects.

Policy PS-3d: Refer projects and code revisions to the County Department of Fire and Emergency Services and responsible fire protection agencies for their review and comment.

Open Spaces and Resource Conservation Element Goals and Policies

Goal OSRC-17: Establish a countywide park and trail system that meets future recreational needs of the County's residents while protecting agricultural uses. The emphasis of the trail system should be near urban areas and on public lands.

Objective OSRC-17.1: Provide for adequate parklands and trails primarily in locations that are convenient to urban areas to meet the outdoor recreation needs of the population, while not negatively impacting agricultural uses.

Policy OSRC-17d: The trails on Figure OSRC-3 make up the County's designated plan for trails. Trail locations are approximate and are described below. Roadways may be used where access cannot be obtained through private property.

5. Russian River Waterway Trail. The Russian River is a navigable waterway from Cloverdale to the coast and as such, public access is protected by Article XV, Section 2 of the California Constitution. This proposed waterway trail extends from the coast to Preston Bridge immediately north of Cloverdale.

4.15.3 Impact Analysis

a. Methodology and Significance Thresholds

The following thresholds are based on *CEQA Guidelines* Appendix G. For purposes of this Program EIR, impacts related to public services and recreation from the project would be significant if implementation of the proposed project would:

1. Result in substantial adverse physical impacts associated with the need for or provision of new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other objectives for:
 - a. Fire protection
 - b. Police protection
 - c. Schools
 - d. Parks
 - e. Other public facilities
2. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated
3. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment

Additionally, for impacts to be considered significant, development of these public service and recreational facilities would also have to result in a significant physical environmental impact not already analyzed and disclosed in the other resource chapters of this Program EIR.

b. Project Impacts and Mitigation Measures

| |
|--|
| Threshold: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives? |
|--|

Impact PS-1 THE PROJECT WOULD NOT RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE CONSTRUCTION OF NEW OR PHYSICALLY ALTERED FIRE FACILITIES TO MAINTAIN ACCEPTABLE SERVICE RATIO RESPONSE TIMES OR OTHER OBJECTIVES. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Once completed, the replacement bridge will not generate additional demand on emergency services and it would not substantially reduce existing response times or require the construction of new or altered fire stations. The existing bridge is expected to remain open while construction of the new bridge is ongoing to allow for continued emergency response. In the event of temporary closure due to public safety concerns mitigation measures are listed in Section 4.16 *Transportation and Traffic*, TRA-1 and TRA-2, that will ensure minimal impact on emergency service response times. The Project construction operations would be required to comply with existing regulations regarding fire safety. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

| |
|--|
| Threshold: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives? |
|--|

Impact PS-2 THE PROJECT WOULD NOT RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE CONSTRUCTION OF NEW OR PHYSICALLY ALTERED POLICE FACILITIES TO MAINTAIN ACCEPTABLE SERVICE RATIO RESPONSE TIMES OR OTHER OBJECTIVES. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Once completed, the replacement bridge will not generate additional demand for police protection and it would not substantially reduce existing response times or require the construction of new or altered police stations. The existing bridge would remain open while construction of the new bridge is ongoing to allow for continued law enforcement response. Therefore, impacts would be less than significant.

Mitigation Measure

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

Impact PS-3 THE PROJECT WOULD NOT RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE CONSTRUCTION OF NEW OR PHYSICALLY ALTERED SCHOOL FACILITIES. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The Project is not a growth inducing project, and impacts to schools would be less than significant without mitigation.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered parks, or the need for new or physically altered parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

Impact PS-4 IMPACTS TO RECREATIONAL FACILITIES AND FUNCTIONS ADJACENT TO AND NEAR THE PROJECT SITE THAT WOULD IMPACT SERVICE AND OTHER PERFORMANCE OBJECTIVES WOULD EITHER BE TEMPORARY DURING CONSTRUCTION, OR RESULT IN BENEFICIAL PERMANENT IMPACTS. NO NEW PARKS WOULD BE CREATED, OR REQUIRED AS A RESULT OF PROJECT CONSTRUCTION. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

No new parks would be developed as part of the Project and the Project will not increase demand and use of existing parks and recreational facilities. There will be temporary and permanent impacts to recreational areas owned or leased by the MRRPD. Temporary impacts from construction staging, access and publicly prohibited areas include approximately 3.13 to 5.05 acres over the three year construction schedule. Permanent impacts are limited, and include the replacement bridge piers on the beach outside the low flow channel on the north side of the river (approximately 0.009 acres), a column along the bank of Dutch Bill Creek (approximately <0.001 acre), and the proposed northern bridge approach within the Monte Rio Fishing Access parking area (approximately 0.06 acre) and the permanent ROW adjacent to the northern bridge approach (approximately 0.04 acres). The proposed bridge structure and its associated ROW over the beach and river would be approximately 0.87 acres and 0.33 acres, respectively.

Accessibility

Although limited during some portions of construction, access to beach and river areas will remain open during construction, as would some parking at the Big Rocky Beach parking area. Access to the boat ramp will remain open during construction. Accessibility to MRRPD beach, river areas, and the Monte Rio Fishing Access is described in detail below. Impacts to parking areas is described in detail in Impact PS-5.

During construction of the replacement bridge, the existing bridge would remain open. It is anticipated that traffic may need to be temporarily restricted to a single lane during some phases of construction. Traffic control would follow the MUTCD Work Area Traffic Control Handbook.

The proposed replacement bridge would provide for improved access to MRRPD facilities. Following completion of the replacement bridge and removal of the existing bridge, accessibility would be improved by a replacement bridge that meets current AASHTO design standards (American Association of State Highway and Transportation Officials, 2018; California Department of Transportation, 2009), providing a safe multimodal route for vehicles, bicycles, and pedestrians. The proposed roadway cross section would include two 12-foot vehicular lanes (one lane in each direction), and 5-foot shoulders/Class II bike lanes adjacent to the travel lanes, and 6-foot wide Class I multi-use sidewalk on both sides of the bridge, meeting ADA requirements, which are currently not available on the existing bridge. In addition to improved vehicle, pedestrian and bicycle access from the replacement bridge, proposed improvements to access also include resurfacing the currently unimproved access road/path that connects Main Street to MRRPD's Dutch Bill Creek.

Access to Beach Areas

Big Rocky and Sandy Beaches – Although portions of Big Rocky and Sandy Beaches would be used temporarily during construction, controlled access to the beach and river areas on the north side of the river would be provided through the Fishing Access and Boat Ramp parking lot staging area and beach access road/driveway during all phases of Project construction. The access road to the beach and Big Rocky Beach parking area would be separated from the construction work area, for example by k-rails and fencing, to provide a physical barrier between beach goers and construction activities. Where the access road crosses under any construction activities, such as under the existing bridge during demolition, protective covers would be constructed to protect cars and pedestrians from debris. A traffic control flagger may be provided where public access and construction staging areas converge, as necessary.

Dutch Bill Creek Beach - Access to Dutch Bill Creek Beach via the unimproved access road/pedestrian path would be restricted during the first and second years of construction, but open during the third year of construction. Following construction, the pathway would be resurfaced, reducing erosion and sedimentation and providing improved access for maintenance vehicles accessing the south side of the beach and river.

River Access (Swimming and Boating)

Recreational water activities would be on-going during construction, although some areas used for construction, staging and access would be restricted for safety. Additionally a buffer around these areas would be implemented for additional public safety. These areas are referred to as “publicly prohibited areas”. River users wishing to pass downstream or upstream through the construction area during construction seasons two and three (when the gravel access pads would be installed in the river) would detour around the access pads by exiting the river, and using the beach, the beach parking access road through the MRRPD Community Center parking lot, and then to the boat ramp area to enter the river. River users wishing to pass through the construction area in the upstream

direction would reverse this route. Signage would be provided to inform river users of changed conditions and direct them to a clearly defined route around the construction site.

Signage would also provide information about additional boat access opportunities at River Park in Guerneville (currently under construction) approximately 4 miles from the Project site and Vacation Beach in Guerneville Park (approximately 3 miles from the Project site). There would be no permanent impact to river access, swimming and boating; instead, recreational use of the river would be improved by removal of the existing bridge piers from the river channel post-construction.

Monte Rio Fishing Access – Boat Ramp and Restrooms

Public access to the boat ramp west of the Project site and restroom facilities across from the MRRPD Community Center would be maintained via the existing paved access road through the MRRPD Community Center parking lot and west of the Monte Rio Fishing Access parking area throughout the entirety of the construction period, with traffic control as needed. River users wishing to pass up or downstream through the construction area during construction seasons two and three (when the gravel access pads would be installed in the river) would detour around the access pads as described in detail above.

Since permanent impacts will improve and be beneficial the recreational facilities and functions described above, this impact will be less than significant without mitigation.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered public facilities, or the need for new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

Impact PS-5 THE PROJECT WOULD RESULT IN PERMANENT AND TEMPORARY IMPACTS TO PUBLIC PARKING FACILITIES. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION MEASURES INCORPORATED.

The majority of the Monte Rio Fishing Access paved parking area to the south of the MRRPD Community Center would be used as a construction staging area year round during the three-year construction period. However, portions of the Big Rocky Beach Parking area would remain open throughout construction and the County would provide for at least 100% replacement of parking throughout the construction period.

Big Rocky Beach Parking Lot

The Big Rocky Beach Parking lot is on MRRPD lands (APN 094-110-002) and supports an estimated 106 standard parking spaces. During the first and second summer construction seasons, the Big Rocky Beach parking area east of the existing bridge would be available for parking. During the third summer construction season, a portion of the Big Rocky Beach parking area east of the existing bridge would be unavailable due to the removal of the existing bridge. Currently the Big Rocky

Beach parking area is not developed, and parking spaces are not delineated, leaving individual drivers to determine parking locations. This scenario often leads to low parking space efficiency and challenges in determining the number of existing parking spaces. Based on an estimated existing 106 parking spaces, parking would be reduced to an estimated 70 parking spaces during the third year of construction.

Monte Rio Fishing Access Parking Area

The Monte Rio Fishing Access parking area is comprised of two parcels, including APN 094-100-035 (owned by the State/CDFW), and APN 094-100-046 (owned by MRRPD). Both parcels include other areas such as landscaping and riparian vegetation, the boat ramp, driveway access, and other park amenities. The majority of parking area is on the CDFW parcel (0.49 acre) with a small portion (0.09 acre) on the MRRPD parcel. Currently the parking area is configured with a total of 69 parking stalls, 6 of which are ADA parking spaces, and 27 of which are pull thru to accommodate boat trailers. The existing pull-through parking spaces range in length from approximately 16 to 34 feet.

CDFW Property

Due to the location of the proposed replacement bridge's north abutment and approach, there would be a reduction of the CDFW owned portion of the parking area (approximately 0.06 acre). To offset the reduction, the proposed Project includes plans for a retaining wall along the southside of the parking area to enlarge the available level parking area and relocate parking spaces lost due to the proposed bridge. The County has engaged CDFW to determine the post-construction parking configuration, including layout and type (pull through or standard) of parking spaces. CDFW has requested that the County provide 100 percent of the existing parking post-construction. Currently, the County has met CDFW's request and proposed a parking configuration that includes 70 parking spaces, 28 of which are pull through, with all of the parking spaces having a length/width greater than or equal to existing, for a net-benefit of one more standard and one more pull through than currently exists. Initial response from CDFW on the most recently proposed post-construction parking plans indicate that CDFW may want to reduce a couple of the parking spaces. The County will implement the Proposed Parking Plans as currently configured, or if preferred, eliminate the two parking spaces (P70 and P10) initially requested for removal by CDFW. Final parking configuration will be subject to CDFW approval. During construction, parking within the CDFW portion of the Monte Rio Fishing Access parking area may be reduced by approximately 0.39 to 0.45 acres, depending upon the construction year. As a result of the on-going coordination with CDFW, the County and CDFW have committed to off-set temporary and permanent parking impacts by the following measures:

Post Construction:

- The County will provide a conceptual plan to CDFW for review to demonstrate the capability of returning 100% or more of the pull-through parking spaces. The County will iterate parking plans as needed on this concept to find a configuration that is suitable to the needs of CDFW. Final parking plan configuration will be subject to CDFW approval and agreed upon during the ROW negotiation phase of the Project.
- Based on conversations with MRRPD, the entrance to the parking lot tends to flood in moderate storms. As a part of the proposed Project, drainage improvements to the parking area will be included in Project plans.
- The County will resurface (pave) and restripe the entire Monte Rio Fishing Access parking area at the completion of the Project.

During Construction:

- The County will develop a temporary parking plan that would provide at least 100% of the existing parking for the duration of construction activities. This temporary parking plan will be subject to review and approval by MRRPD and CDFW.
- The County will provide specification language for review by CDFW regarding parking for the steelhead fishing season during construction, with the goal of providing 100% of existing parking for boat trailers during the fishing season (generally between October 1 and April 30, with specific fishing periods determined annually). This may include opening up portions of the parking area during certain dates through the construction process or finding alternative nearby off-site parking.
- CDFW will review demand for canoe, kayak, and fishing boat use and boat trailer parking between April 30 to Oct 1, so that the County can evaluate the need and provide parking, with the goal of providing 100% of existing parking for boat trailers during this time.
- The parking surfaces will be provided in comfortably usable condition between construction seasons. The County will provide specification language for review by CDFW regarding parking area condition and maintenance during construction

MRRPD Portion of Monte Rio Fishing Access Property

Temporary impacts from construction staging to the MRRPD-owned portion of the Monte Rio Fishing Access parking area would be approximately 0.09 acres during each construction season. There are no permanent impacts to MRRPD's portion of the Monte Rio Fishing Access parking area. The Big Rocky Beach parking area would be left in the same condition as it was prior to construction, with at least as many parking spaces available as pre-construction. Parking areas adjacent to the Monte Rio Community Center would not be affected by the Project and would remain open during and after construction. The off-sets for temporary parking impacts during construction listed above for CDFW would also off-set temporary parking impacts for MRRPD. In addition, the County has committed to:

- For temporary reductions in parking at Big Rocky Beach, where there are no delineated parking spaces, the County will add delineated parking stalls to increase parking capacity during the summer season. Proposed methods of delineating parking stalls may include concrete wheel stops, signage, concrete markers, fabric strips affixed to the ground or other methods to be mutually agreed upon and subject to review and approval by MRRPD.

In addition to the above Project conditions, implementation of Mitigation Measure PS-1 will reduce these impacts to less than significant.

Mitigation Measures

Mitigation Measure PS-1

Permanent Improvements to MRRPD River, Beach, Parking, and Future Facilities. In addition to a replacement bridge over MRRPD beach and river areas that would meet current seismic safety standards, reducing the safety risk to beach users, the Project includes a number of features that permanently improve MRRPD facilities, including:

- Replacement bridge will provide improved vehicular, pedestrian and cyclist access to MRRPD sites, including replacement with roadways and sidewalks that meet current American with Disabilities (ADA) design standards
- In addition to wider roadways and sidewalks that are ADA compliant, the proposed replacement bridge is designed to include Class I and Class II bike lanes. These bike lanes will provide improved access for cyclists to MRRPD beaches and other properties, and well as an improved riding experience for cyclists in the general vicinity
- The removal of the existing bridge and its piers will open up the low-flow river channel, improving conditions for flood hydraulics, water recreation, and fisheries habitat. The soil around the existing piers has washed away, creating deep scour pools that can present a safety hazard to water users, as well as to the overall bridge structure. The replacement bridge was designed to clear-span the low-flow river channel, improving water recreational opportunities and fisheries habitat.
- Similar to existing bridge pier removal, removal of the remnants of a pre-1934 pier footing from the river channel as a part of the Project would eliminate a potential safety hazard, and improve recreational water use conditions and aquatic habitat for salmonids.
- The replacement bridge was designed with significant input from the community to be an attractive asset that would enhance the community's unique character and serve as a focal point for the community and an attractive destination for visitors. During the course of three community meetings and a web-based survey, the County solicited input from the community on bridge type, design, themes, and architectural amenities, resulting in the selection of the steel-tied arch with view overlooks on each side of the bridge.
- Resurfacing of the currently unimproved path from Main Street to Dutch Bill Creek, and potential replacement of the existing bollards midway down the access, in coordination with MRRPD. The improvements would allow for better emergency vehicle access to Dutch Bill Creek and reduce erosion and sedimentation. The County would coordinate with MRRPD to determine if resurfacing and replacing the bollards along the path is desired and develop a mutually agreed upon plan for MRRPD's review and approval.
- Following construction, the Monte Rio Fishing Access parking area would be reconfigured, repaved and restriped in coordination with MRRPD and CDFW. In addition, improvements to the Monte Rio Fishing Access parking area drainage system may be incorporated into the project as part of the project's Low-impact Development (LID) water treatment plans, as feasible.
- Temporary Parking during Construction: To mitigate for temporary parking reductions during construction at the Monte Rio Fishing Access parking areas, the County will develop a temporary parking plan that would provide 100% of the existing parking for the duration of construction activities. This temporary parking plan will be subject to review and approval by MRRPD. For temporary reductions in parking at Big Rocky Beach, the County will delineate parking stalls to increase parking capacity. Proposed methods of delineating parking stalls may include concrete wheel stops, signage, concrete markers, fabric strips affixed to the ground or other methods to be mutually agreed upon and subject to review and approval by MRRPD.
- Implementation of Safety Protection Measures for Recreational Beach and Water Users: To minimize and avoid harm to recreational beach and water users, a buffer area around construction, access and staging areas will be restricted from public use as "publically prohibited areas". Publically

prohibited areas will be delineated with signage, fenced, or otherwise marked to limit access and protect the public from construction activities. In addition to a “publically prohibited area” buffer, the bypass culverts would also be fenced (or screened with trash racks) at their inlet and outlets to prevent people from entering.

- **Traffic Control during Construction:** During all periods of construction, access across the river between the north and south areas of Monte Rio will remain open. Although traffic may be diverted through lane closures and re-routing, a traffic control plan, including notification prior to and during construction will be implemented.
- **Construction Noise Minimization Avoidance and Minimization:** Short-term construction activities would require motorized construction equipment that would result in potential noise impacts to MRRPD beach and water users. Noise avoidance, minimization and mitigation measures include conformance to Section 14-8.02, “Noise Control,” of the Caltrans Standard Specifications. Other minimization measures include:
 - Use of a muffler for internal combustion engines
 - Construction activities, excluding activities required to occur without interruption or activities that would pose a significant safety risk to workers or citizens, or in the event of an emergency, shall be limited to between the daytime hours of 7:00 a.m. and 7:00 p.m. No work would be allowed on holidays. Weekend work may be allowed, on a limited basis, with prior approval from the Department of Transportation and Public Works, during the hours of 9:00 a.m. and 5:00 p.m.
 - Portable/stationary equipment (e.g., generators, compressors) and equipment staging areas will be located at the furthest distance from the nearest residential dwelling, and, where feasible, from the beach areas.
 - As directed by the County resident engineer, the contractor shall implement appropriate additional noise abatement measures including, but not limited to, the installation of temporary noise barriers, turning off idling equipment after no more than five minutes of inactivity, and rescheduling construction activity to avoid noise-sensitive days or times.

Significance After Mitigation

Impacts would be less than significant with mitigation.

| | |
|-------------------|---|
| Threshold: | Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? |
|-------------------|---|

Impact PS-6 THE PROJECT WOULD NOT INCREASE THE USE OF EXISTING NEIGHBORHOOD AND REGIONAL PARKS OR OTHER RECREATIONAL FACILITIES SUCH THAT SUBSTANTIAL PHYSICAL DETERIORATION OF THE FACILITY WOULD OCCUR OR BE ACCELERATED. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The project is not a growth inducing project and would not encourage significant public use of recreational facilities beyond the existing baseline of the current bridge.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold: Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Impact PS-7 THE PROJECT WILL TEMPORARILY AND PERMANENTLY IMPACT EXISTING RECREATIONAL FACILITIES. EXISTING PARKING FACILITIES WILL BE ALTERED AS A RESULT OF THE PROJECT. IMPACTS WILL BE LESS THAN SIGNIFICANT WITH MITIGATION MEASURES INCORPORATED.

As described in Impacts PS-4 and 5, there will be temporary and permanent impacts to recreational and public facilities adjacent to the project area. Implementation of Mitigation Measure PS-1 would reduce impacts to a less than significant level.

Mitigation Measures

Mitigation Measure PS-1

Significance After Mitigation

Impacts would be less than significant with mitigation.

4.15.4 Cumulative Impacts

A project's environmental impacts are "cumulatively considerable" if the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." (*CEQA Guidelines* Section 15065[a][3]). Development considered part of the cumulative analysis includes buildout of the County General Plan, utilizing ABAG projections, and projects in Table 3-1.

The geographical scope for cumulative public service and recreation facility impacts is the service area of the services serving the project site. This geographic scope is appropriate because projects within this area will increase the demand on these services.

For this analysis, a cumulative impact would occur if growth in the service area requires physical expansion of facilities such as construction of new public or recreational facilities that would result in adverse physical impacts. The project is not a growth inducing project and would replace the existing Bohemian Highway Bridge. Impacts to existing services would not be cumulative for police, fire protection, schools, emergency services, libraries, or recreational facilities, as the existing baseline impact on these services would remain relatively unchanged. Cumulative impacts would be less than significant.

This page intentionally left blank.

Transportation Table of Contents

| | | |
|--------|--------------------------|---------|
| 4.16 | Transportation | 4.16-1 |
| 4.16.1 | Setting..... | 4.16-1 |
| 4.16.2 | Regulatory Setting | 4.16-3 |
| 4.16.3 | Methodology | 4.16-4 |
| 4.16.4 | Impact Analysis | 4.16-6 |
| 4.16.5 | Cumulative Impacts | 4.16-11 |

4.16 Transportation

This section analyzes the impacts of the project on the local transportation system. The section includes analysis of the development facilitated by the Project.

4.16.1 Setting

a. Existing Roadway Network

Coming from the east, regional access to the site is from Highway 101, then west on River Road, then south on Bohemian Highway to cross the existing Monte Rio Bridge. Coming from the west, regional access to the site is from Highway 1 to Highway 116, then south on Bohemian Highway to cross the bridge (see figures 2-1, 2-2). On the southern end of the bridge is Main Street to the west, and River Boulevard to the east. Shortly after crossing the bridge in the northern direction, Bohemian Highway ends and Highway 116.

Transit Access and Circulation

Sonoma County Transit

Sonoma County Transit provides local and intercity public transportation services within the County on 29 routes that service eight zones. One bus stop is located on the northern end of the existing bridge.

Bicycle Conditions

Based on the *County of Sonoma Bicycle and Pedestrian Plan (Plan, County of Sonoma 2010)*, bicycle facilities are classified into several types, including:

1. **Class 1 Multi-Use Paths** – provide a completely separated, exclusive right-of-way for bicycling, walking, and other non-motorized uses.
2. **Class 2 Bicycle Lanes** – are striped, preferential lanes for one-way bicycle travel on roadways. Some Class 2 bicycle lanes include striped buffers that add a few feet of separation between the bicycle lane and traffic lane or parking aisle.
3. **Class 3 Bicycle Routes** – are signed bicycle routes where riders share a travel lane with motorists. Bicycle boulevards (Class 3E) are a special type of Class 3 bicycle route where the shared travel way has low motor vehicle volumes and low speed that prioritize convenient and safe bicycle travel through traffic calming strategies, wayfinding signage, and traffic control adjustments.
4. **Class 4 Bicycle Routes** – are on-street bike lanes that are buffered from traffic using physical barriers, such as curbs, planters, or parked cars.
5. **Unpaved Recreational Trails** – are trails that facilitate pedestrian and bicycle travel but are not included in the bikeways network.

Sonoma County has approximately 257 miles of built bicycle infrastructure. Class 2 facilities are the dominant form of built bicycle infrastructure, followed by Class 3 and Class 1 facilities. The Plan describes a proposed Class 1 bicycle facility crossing the bridge. The planned trail is identified as the “Russian River Trail” that starts in Healdsburg and ends at the Monte Rio Bridge. The Plan also

describes a planned “Dutch Bill Creek Trail” that starts at Highway 116 and ends at Graton Road, and defines a “Class 1 along portions of the North Pacific Coast Railroad right of way.”

Pedestrian Conditions

Pedestrian facilities at the Project site include sidewalks, crosswalks, and pedestrian signals. The existing bridge includes a sidewalk of approximately four feet that narrows at the points the steel truss members of the bridge penetrate the bridge deck. South of the bridge on the north side of Main Street the sidewalk continues to a point just past Bartletts Market. South of the bridge on the east side, the sidewalk ends at the end of the bridge and meets a gravel path on to River Boulevard. On the North end of the bridge, the sidewalks stop at the end of the bridge.

4.16.2 Regulatory Setting

The determination of significance of Project impacts is based on applicable policies, regulations, goals, and guidelines defined by Sonoma County and the State.

Sonoma County Transportation Authority

The SCTA is governed by the Sonoma County board of Supervisors and a twelve-member Board of Directors representing nine cities – Cloverdale, Cotati, Healdsburg, Petaluma, Rohnert Park, Santa Rosa, Sebastopol, Sonoma, and Windsor. The SCTA acts as the countywide planning and fund programming agency for transportation and performs a variety of important functions related to advocacy, project management, planning, finance, grant administration, and research. The SCTA helps implement transportation projects throughout Sonoma County, which includes highways, roads, public transit, and active transportation – such as bike and pedestrian paths and trails.

The passage of Measure M, the Traffic Relief Act for Sonoma County, by Sonoma County voters in 2004 provided for a 0.25-cent sales tax collected over 20 years to be used to maintain local streets, fix potholes, accelerate the widening of Highway 101 for High Occupancy Vehicle lanes, improve local street operations, restore and enhance transit services, support the development of passenger rail service, and build safe bicycle and pedestrian routes. The funds are dedicated towards specific programs and projects specified in the voter approved Expenditure Plan.

The programs and projects contained in the Expenditure Plan are based upon the 2016 Comprehensive Transportation Plan developed by SCTA. The Comprehensive Transportation Plan identified goals to improve and maintain all modes of transportation related to the movement of people and goods.

County of Sonoma General Plan

The Circulation and Transit Element of the Sonoma County General Plan (2016) contains the following objectives and policies relevant to the proposed Project:

Objective CT-1.2: Supplement the Highway 101 and SMART rail corridors with improvements designed to provide east/west access to these corridors.

Objective CT-1.5: Reduce greenhouse gas emissions by minimizing future increase in VMT, with an emphasis on shifting short trips by automobile to walking and bicycling trips.

Objective CT-1.6: Require that circulation and transit system improvements be done in a manner that, to the extent practical, is consistent with community and rural character. Minimizes disturbance of the natural environment, minimizes air and noise pollution, and helps reduce greenhouse gas emissions.

Objective CT-1.7: Reduce travel demand countywide by striving to provide a jobs/housing balance of approximately 1.5 jobs per household and encourage creation of jobs and housing in urbanized areas along the SMART passenger rail corridor and other transit centers.

Objective CT-1.8: Improve demand for transit by development of a growth management strategy encouraging projects in urbanized areas that decrease distance between jobs and housing, increase the stock of affordable housing, and increase density.

Policy CT-1b: Focus commute and through traffic onto Highway 101. Designate major arterial routes to serve primarily as connectors between urban areas.

Policy CT-1c: Work with the Cities to provide locations for jobs, housing, shopping, and coordination of location of transit along the Highway 101 corridor to reduce the volume of traffic on east/west corridors.

Policy CT-1d: Work with the Cities to provide jobs, housing, shopping, and coordination of local transit along the SMART passenger rail corridor to reduce the need for automobile travel to and from work and shopping centers.

Policy CT-1e: Support development, implementation, and operation of a passenger rail system and contiguous north south pedestrian and bicycle path along the SMART passenger rail corridor including the funding necessary to support a multi-modal feeder system.

Policy CT-1k: Encourage development that reduces VMT, decreases distances between jobs and housing, reduces traffic impacts, and improves housing affordability.

Policy CT-2f: Require discretionary development projects to provide bicycle and pedestrian improvements and gap closures necessary for safe and convenient bicycle and pedestrian travel between the project and the public transit system.

Policy CT-2v: Require discretionary development projects, where nexus is identified, to provide crossing enhancements at bus stops, recognizing that many transit riders have to cross the street on one of the two-way commutes.

Policy CT-2w: Increase the convenience and comfort of transit riders by providing more amenities at bus stops, including adequately-sized all-weather surfaces for waiting, shelters, trash cans, bike racks, and pedestrian-sized lighting. Required that these improvements be provided as part of nearby public or private development projects.

Policy CT-3c: The Sonoma County Bicycle and Pedestrian Advisory Committee (BPAC) shall be responsible for advising the Board of Supervisors, Planning Commission, Board of Zoning Adjustments, Project Review Advisory Committee, and County staff on the ongoing planning and coordination of the County's bicycle and pedestrian transportation network.

Policy CT-3d: The Regional Parks Department shall be responsible for establishing and maintaining Class I bikeways, and the Department of Transportation and Public Works (TPW) shall be responsible for establishing and maintaining Class II and III bikeways and pedestrian facilities along public rights-of-way in unincorporated areas.

Policy CT-3v: Where nexus exists, require private or public development to plan, design, and construct bicycle and pedestrian facilities to integrate with the existing and planned bicycle and pedestrian network.

Policy CT-3oo: Require new development in Urban Service Areas and unincorporated communities to provide safe, continuous, and convenient pedestrian access to jobs, shopping and other local services and destinations. Maintain consistency with City standards for pedestrian facilities in Urban Service Areas that are within a City's Sphere of Influence or Urban Growth Boundary.

Policy CT-3pp: Require pedestrian-oriented street design in Urban Service Areas and unincorporated communities.

4.16.3 Methodology

Section 15064.3 of the *CEQA Guidelines* provides that vehicle miles traveled (VMT) is the most appropriate metric for the analysis of transportation impacts under CEQA.

VMT measures the amount of driving that a project generates. For example, a project generating 100 total (inbound and outbound) vehicle trips per day with an average of 5.0 miles per trip results in 500 project-generated VMT per day. The impact analysis for traffic and circulation was conducted by evaluating the potential changes to the existing bridge, roadway approaches, and other transportation conditions based on the anticipated Project construction activities and proposed Project design. Relevant policies and plans related to transportation and circulation issues were also reviewed.

Significance Thresholds

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project would be considered to have a potentially significant impact on transportation and circulation if it would result in any of the conditions listed below.

- Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?
- Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- Result in inadequate emergency access?
- Result in inadequate parking capacity?

CEQA Guidelines 153064.3(b)(2) states that transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact.

4.16.4 Impact Analysis

| | |
|-------------------|---|
| Threshold: | Would the Project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? |
| Threshold: | Would the Project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? |

Impact TRA-1 THE PROJECT WOULD NOT CONFLICT WITH PROGRAMS, PLANS, ORDINANCES, OR POLICIES ADDRESSING THE CIRCULATION SYSTEM, INCLUDING TRANSIT, ROADWAY, BICYCLE AND PEDESTRIAN FACILITIES, AND WOULD NOT CONFLICT OR BE INCONSISTENT WITH CEQA GUIDELINES SECTION 15064.3. THIS IMPACT IS LESS THAN SIGNIFICANT.

Vehicle Miles Traveled (VMT)

Replacement of the existing two lane bridge would not change the amount of traffic on Bohemian Highway/Main Street through Monte Rio because it is not a new development or growth inducing Project. The Project does not increase the capacity of Bohemian Highway and is not anticipated to increase operational related vehicle miles traveled (VMT). A temporary minor increase in VMT could occur during Project related construction as a result of worker trips to the Project site, materials delivery, and materials hauling. Any minor increase in VMT would be temporary. Per CEQA guidelines section 15064.3, subdivision (b) "Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact."

Public Transit Facilities

The Project would not cause significant adverse impacts to fixed-route service. The Project would not conflict with plans, policies, ordinances, or regulations pertaining to public transit. Ridership on area transit lines is not expected to exceed available capacities with construction of the project.

Bicycle & Pedestrian Facilities

The proposed bridge profile would be raised to meet the 100-year flood with an ADA-compliant longitudinal grade to accommodate the pedestrians crossing the bridge. The Project was presented to the Sonoma County Bicycle and Pedestrian Advisory Committee and was found to be in conformance with the policies in the 2010 Sonoma County Bicycle and Pedestrian Plan. The Project proposes no features that would be hazardous to bicycles or pedestrians. Sidewalks and bike lanes in conformance with the County's General Plan and Bicycle and Pedestrian Plan are included in the Project design.

Air Traffic Patterns

Airports in Sonoma County include the Charles M. Schulz Sonoma County Airport, the Cloverdale Municipal Airport, the Healdsburg Municipal Airport, the Petaluma Municipal Airport, the Sonoma Skypark Airport, and the Sonoma Valley Airport. The Project site is not in an airport influence area¹.

¹ The area around each County of Sonoma airport where current or future airport-related noise, over flight, safety, and/or airspace protection factors may significantly affect land uses or necessitate restrictions on those uses (County of Sonoma 2020).

Therefore, the Project would not conflict with an airport land use compatibility plan. No impacts to air traffic patterns would occur.

Construction Traffic

Project-related demolition, excavation, grading, and construction of the Project site would occur over a three year timeline to construct the new bridge and demolish the existing bridge. Some elements of the construction will require staging of traffic to maintain access to the existing bridge. It is anticipated that traffic may need to be temporarily restricted to a single lane during some phases of construction for the north abutment and the adjacent 30-foot slab span. On the south end, traffic control would be required for construction of the southern approach to the bridge and may require temporary restriction of traffic to a single lane during paving. Traffic control would follow the MUTCD Work Area Traffic Control Handbook (2009).

The contractor selected to construct the Project will be required to submit a Construction Traffic Control Plan for County review and approval. The plan shall include, but not be limited to, the following:

1. A prohibition on all construction truck activity during the period 30 minutes prior to the beginning of school and 30 minutes after the end of the school day.
2. The provision of flaggers at all on-site locations where construction trucks and construction worker vehicles conflict with school vehicle, bicycle, or pedestrian traffic.
3. Preservation of emergency vehicle access.
4. Identification of approved truck routes in communication with the County.
5. Location of staging areas and the location of construction worker parking.
6. Identification of the means and locations of the separation (i.e. fencing) of construction areas.
7. Provision of a point of contact for incorporated and unincorporated Sonoma County residents to obtain construction information, have questions answered and convey complaints.
8. Identification of the traffic controls and methods proposed during each phase of Project construction. Provision of safe and adequate access for vehicles, transit, bicycles, and pedestrians. Traffic controls and methods employed during construction shall be in accordance with the requirements of the Manual of Uniform Traffic Control Devices (Federal Highway Administration, 2009 Manual on Uniform Traffic Control Devices with Revisions 1 and 2, May 2012).
9. Provision of notice to relevant emergency services, thereby avoiding interference with adopted emergency plans, emergency vehicle access, or emergency evacuation plans.
10. Maintenance of bicycle and pedestrian access along the Project's driveway for the duration of Project construction.

Roadway Closure

If at any point during construction, the County or the selected contractor determines a need to close the existing bridge to traffic prior to the completion and opening of the new bridge, or the replacement bridge during demolition of the old structure due to public safety concerns, the contractor must submit in writing the reasons for and a schedule with dates of the closure. Sonoma County DTPW shall approve any closures of the bridge or approach roadways prior to closure.

Mitigation Measure TRANS-1 will ensure that any need for temporary closure will be less than significant

Mitigation Measure

TRANS-1- Notification of Closure

The County shall notify property owners along Geysers Road at least 7 days in advance of the proposed temporary closure. Signage shall be placed at both ends of Geysers road notifying motorists of the planned closure. A working jobsite telephone number must be available and provided to Emergency Services during any bridge or approach roadway closures so they may call ahead to request re-opening. Any bridge or approach roadway closures must be re-opened within 10 minutes for emergency vehicles, or within 30 minutes for non-emergency vehicles.

Significance After Mitigation

This impact would be less than significant with mitigation.

Impacts are less than significant.

| |
|--|
| Threshold: Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)? |
|--|

Impact TRA-2 THE PROPOSED PROJECT WOULD NOT SUBSTANTIALLY INCREASE HAZARDS DUE TO A DESIGN FEATURE (E.G., SHARP CURVES OR DANGEROUS INTERSECTIONS) OR INCOMPATIBLE USES (E.G., FARM EQUIPMENT). THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

The Project will not increase hazards due to geometric design features, or incompatible uses. In fact, primary purpose of the Project is to replace the current seismically at risk bridge with a new bridge that is up to current safety design standards.

The Project area is in a region of relatively high seismicity. The most recent Caltrans Bridge Inspection Report for the existing multi span slab bridge notes a number of structural deficiencies and identifies the bridge as fracture critical. The following deficiencies have been observed:

- The bridge has been identified as being at seismic risk. In 2012, a detailed rehabilitation versus replacement study was performed. The Caltrans Seismic Design Criteria sets parameters for designing a bridge in order to meet an identified earthquake level, which is referred to as a "design level earthquake". During the study, the bridge was analyzed to see how it would likely perform in a design level earthquake. The study results showed that the bridge is not capable of withstanding a design level earthquake. The study showed that all of the piers had an unacceptable demand to capacity ratio for shear forces in the footings.
- Hydraulic analysis shows that the bridge does not meet the current requirements for freeboard for either the 100-year or the 50-year flood events.
- Geotechnical analysis indicates that the south side in particular is prone to liquefaction of multiple layers within the upper 100 feet of the ground surface. On the north side, several potentially liquefiable layers were encountered within the upper 35 feet of the ground surface.

The existing bridge has also been flagged as functionally obsolete. The two travel lanes have substandard width, and there are no shoulders. Due to insufficient width, large vehicles such as busses or semi-trailer trucks must cross the bridge alone while other traffic waits. Additionally, the narrow sidewalk width and lack of bike lanes do not provide adequate pedestrian and bicycle safety. The existing bridge does not meet the current American Association of State Highway and Transportation Officials (AASHTO) design requirements.

The proposed bridge will address the structural deficiencies to address the seismic risks identified above. The proposed bridge profile would be raised to clear the 100-year flood level, this design is an ADA-compliant longitudinal grade to accommodate the pedestrians crossing the bridge. Sidewalks and bicycle lanes will be provided, and a concrete barrier will separate the traveled roadway from the sidewalk. The Project's geometric design will not add sharp curves or dangerous intersections.

Therefore, the proposed Project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). This impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Significance After Mitigation

This impact would be less than significant without mitigation.

| |
|--|
| Threshold: Would the project result in inadequate emergency access? |
|--|

Impact TRA-3 THE PROPOSED PROJECT WOULD NOT RESULT IN INADEQUATE EMERGENCY ACCESS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION.

The existing bridge would remain open while construction of the new bridge is occurring. Some traffic delays may occur due to construction related impacts, but traffic will always be maintained through and near the Project site. Traffic flow will be maintained using flagging crews. Local emergency services will be notified prior to construction beginning to inform them that delays may occur and provide the proposed construction schedule. There will be no impediment to emergency responder access to and through the Project site during construction. Once complete, the Project will provide access to emergency services currently provided by the existing bridge. If at any point during construction, the County or the selected contractor determines a need to temporarily close traffic to the bridge prior to the completion and reopening of the new bridge, or during demolition of the old structure due to public safety concerns, the contractor must submit in writing the reasons for closure and a schedule with dates of the closure. Sonoma County DTPW shall approve any closures of the bridge or approach roadways prior to the closure. As detailed in mitigation TRANS-1, a working jobsite telephone number must be available and provided to Emergency Services during any bridge or approach roadway closures so they may call ahead to request re-opening and any bridge or approach roadway closures must be re-opened within 10 minutes for emergency vehicles. Therefore, there would be adequate emergency service and access to and through the Project and the Project would not cause a significant impact on emergency access.

Mitigation Measures

Mitigation Measure TRANS-2 - Emergency Access

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

Significance After Mitigation

This impact would be less than significant with mitigation.

4.16.5 Cumulative Impacts

A project's environmental impacts are "cumulatively considerable" if the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (*CEQA Guidelines* Section 15065[a][3]). The geographic scope for cumulative transportation impacts is limited to the Project vicinity. Transportation impacts facilitated by the operation of the new bridge would not significantly exceed the existing baseline of the current bridge. The Project would not increase VMT in its operation post construction and would not significantly contribute to an increase in VMT in the surrounding area. Since the Project is not a cumulative development project or growth inducing project, its cumulative impacts to transportation related impacts would be less than significant.

This page intentionally left blank.

Tribal Cultural Resources Table of Contents

| | | |
|--------|---|--------|
| 4.17 | Tribal Cultural Resources | 4.17-1 |
| 4.17.1 | Setting | 4.17-1 |
| 4.17.2 | Regulatory Setting | 4.17-2 |
| 4.17.3 | Regional Tribal Cultural Resource | 4.17-2 |
| 4.17.4 | Impact Analysis | 4.17-3 |
| 4.17.5 | Cumulative Impacts | 4.17-5 |

4.17 Tribal Cultural Resources

The analysis in this section has been prepared in accordance with CEQA Guidelines Section 15064.5 and considers potential impacts to Tribal Cultural Resources (TCR). This section includes a brief summary of TCR background information and a summary of consultation conducted by the County with local Native American groups. Potential impacts to cultural resources are addressed in Section 4.5, *Cultural Resources*.

4.17.1 Setting

The Archaeological Area of Potential Effects (APE) lies within territory with cultural significance to both the Coast (Bodega) Miwok and the Kashia Pomo.

Each of these groups is discussed below. A detailed discussion of ethnographic setting of the site is documented in Section 4.5- Cultural Resources.

a. Coast Miwok

Coast Miwok territory is centered on Marin and Sonoma Counties, extending roughly from Duncan's Point south to Point Bonita, with the inland boundary east of the Sonoma River (Kelly 1978:414; Kroeber 1925:443). The Miwok Language consists of two dialect groups, the southern, or Marin group, and the western, or Bodega group (Kelly 1978:414).

The pre-contact Coast Miwok inhabited villages made up of conical dwellings, semi-subterranean sweathouses, and dance houses (Kelly 1978:417). Each village had a chief to oversee village affairs and social and ceremonial life was organized around moieties, or dichotomous groups, classed as either Land or Water (Kelly 1978:419).

Coast Miwok subsistence was based on hunting, gathering, and fishing (Kelly 1978: 415-417). Dried acorns and kelp were primary food sources during the winter and early spring when food was scarce. Coast Miwok relied heavily on nearshore fish and shellfish and on fish from rivers, marshes, and the bay. Hunting focused on deer, elk, bear, and small game. The material culture of the Coast Miwok included clamshell disk beads as currency, and a variety of stone tools, shell ornaments, ceremonial artifacts, and baskets (Kelly 1978: 417-418).

b. Pomo

Southern Pomo territory extends roughly from Gualala south to Duncan's Point, east to the Russian River (McLendon and Oswalt 1978). Southern Pomo is one of several Pomo dialect groups.

The Pomo were organized into a series of independent tribelets ranging in size from 100 to 2,000 people, with the most significant social unit being the kin group (Bean and Theodoratus 1978: 293). The Pomo participated in a clamshell disk bead exchange system internally and among other groups (Bean and Theodoratus 1978: 298).

Pomo subsistence was based on hunting, gathering, and fishing, with acorns as a primary staple (Bean and Theodoratus 1978: 293). Other important plant resources included Buckeye nuts, berries, and seeds from approximately 15 types of grasses, roots, and bulbs. Big game included deer, elk, and antelope. Material culture included obsidian and chert tools, intricate basketry, and bone and shell implements (Bean and Theodoratus 1978: 291).

C. Consulting Local Native American Tribes

Two Native American Tribes have responded to requests for consultation. The Federated Indians of Graton Rancheria consist of both Coast Miwok and Southern Pomo people. The Kashia Band of Pomo Indians of the Stewarts Point Rancheria are also known as the Kashia Pomo. Both tribes are federally recognized and play an active role in society today, including the preservation of traditional practices, protection of cultural resources, and environmental stewardship. The project site is within traditionally and culturally affiliated geographic area of these Tribes.

4.17.2 Regulatory Setting

a. Assembly Bill 52

As of July 1, 2015, California Assembly Bill 52 of 2014 (AB 52) was enacted and expands CEQA by defining a new resource category, “tribal cultural resources.” Assembly Bill 52 establishes that “A project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment” (PRC Section 21084.2). It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a TCR, when feasible (PRC Section 21084.3). PRC Section 21074 (a)(1)(A) and (B) defines TCR as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe” and meets either of the following criteria:

- a) Listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined in Public Resources Code (PRC) section 5020.1(k), or
- b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. AB 52 requires that lead agencies “begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project.” Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the lead agency. As of the date of publication of this Draft EIR, the County is continuing to engage in the AB 52 tribal consultation process with the Kashia Band of Pomo Indians of Stewards Point and the Federated Indians of Graton Rancheria (FIGR).

4.17.3 Regional Tribal Cultural Resources

The County of Sonoma prepared and mailed AB 52 notification letters on November 1, 2021 to tribes listed by the Native American Heritage Commission. On November 16, 2021 The Kashia Band of Pomo Indians of Stewards Point responded to the request for consultation and on December 3,

2021, the Federated Indians of Graton Rancheria responded to request consultation under AB 52. Consultation is ongoing with both tribes.

4.17.4 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, an impact on Tribal Cultural Resources from the proposed Project would be significant if the following applies:

- 1) Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
 - a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC section 5020.1(k), or
 - b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

b. Project Impacts and Mitigation Measures

| | |
|-------------------|--|
| Threshold: | <p>Would the Project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?</p> <p>Would the Project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1?</p> |
|-------------------|--|

Impact TCR-1 THE PROJECT HAS THE POTENTIAL TO IMPACT TRIBAL CULTURAL RESOURCES. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

TCRs are known to exist near the Project APE. As described in Section 4.5, *Cultural Resources*, the Project site has been determined to have high sensitivity near the North abutment and moderate sensitivity near the south abutment.

Extended Phase I analysis is proposed to further investigate the presence/ absence of resources, including TCRs. Potential impacts to tribal cultural resources would be less than significant with implementation of mitigation measures, conducted in tandem, when appropriate, with the mitigation measures included in Section 4.5, *Cultural Resources*.

Mitigation Measures

TCR-1 Tribal Cultural Resources Coordination and Consultation

Archival research has identified the site to be sensitive with regard to possible presence of unknown TCR. Throughout the implementation of Mitigation Measures CUL-2 through CUL-7 (see pages 4.5-19-20, *Cultural Resources*), the qualified archaeologist retained to implement the measures shall confer with local California Native American tribe(s) on the identification and treatment of tribal cultural resources and/or resources of Native American origin not yet determined to be tribal cultural resources through AB 52 consultation. If, during the implementation of Mitigation Measures CUL-2 through CUL-7, a resource of Native American origin is identified, the County shall be notified immediately in order to open consultation with the appropriate local California Native American tribe(s) to discuss whether the resource meets the definition of a tribal cultural resource as defined in AB 52.

TCR-2 Avoidance of Tribal Cultural Resources

When feasible, the Project shall be designed to avoid known tribal cultural resources. The feasibility of avoidance of tribal cultural resources shall be determined by the County, FHWA, and in consultation with local California Native American tribe(s).

TCR-3 Tribal Cultural Resource Plan

A Tribal Cultural Resources Plan shall be required for work in areas identified as high to moderate sensitivity for tribal cultural resources during consultation with local Native American tribes during the implementation of TCR-1 and/or by the qualified archaeologist during the implementation of CUL-2 through CUL-7. Prior to starting construction, the County or its consultant, shall prepare a tribal cultural resources treatment plan to be implemented in the event an unanticipated archaeological resource that may be considered a tribal cultural resource is identified during construction. The plan shall include any necessary monitoring requirements, suspension of all earth-disturbing work in the vicinity of the find, avoidance of the resource or, if avoidance of the resource is infeasible, the plan shall outline the appropriate treatment of the resource in coordination with local Native American tribes and, if applicable, a qualified archaeologist. Examples of appropriate treatment for tribal cultural resources include, but are not limited to, protecting the cultural character and integrity of the resource, protecting traditional use of the resource, protecting the confidentiality of the resource, or heritage recovery. As appropriate, the tribal cultural resources treatment plan may be combined with any Extended Phase I, Phase II, and/or Phase III work plans or archaeological monitoring plans prepared for work carried out during the implementation of Mitigation Measures CUL-4, CUL-6, CUL-7, or CUL-8. The plan shall be reviewed and approved by the County and the appropriate local California Native American tribe(s) to confirm compliance with these measures prior to construction.

TCR-4 Native American Monitoring

For work in areas identified as high to moderate sensitivity for tribal cultural resources, consultation with local California Native American tribe(s) during the implementation of TCR-1 and/or areas identified as sensitive for cultural resources of Native American origin by the qualified archaeologist during the implementation of CUL-2 through CUL-7, Sonoma County DTPW, in conjunction with interested tribes, shall retain Native American monitor(s) representing tribes that are traditionally and culturally affiliated with the geographic area of the project site to observe ground disturbance, including archaeological excavation, associated with the Project. Monitoring methods and requirements shall be outlined in a tribal cultural resources treatment plan prepared under Mitigation Measure TCR-3. In the event of a discovery of tribal cultural resources, the steps identified in the tribal cultural resources plan prepared under Mitigation Measure TCR-3 shall be implemented.

Significance After Mitigation

Implementation of Mitigation Measures TCR-1 through TCR-5 would reduce potential impacts to TCRs from the Project to less than significant levels.

4.17.5 Cumulative Impacts

A project's environmental impacts are "cumulatively considerable" if the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future project" (*CEQA Guidelines* Section 15065[a][3]). The geographic scope for cumulative TCRs impacts for the Project include Coast Miwok and Southern Pomo territory. This geographic scope is appropriate for TCRs because TCRs are regionally specific and determined by the local tribes. Cumulative development in the region would continue to disturb areas with the potential to contain TCRs. Given the potential to damage these unknown tribal cultural resources, cumulative impacts are considered significant without mitigation. Cumulative projects are reviewed separately by the appropriate jurisdiction and undergo environmental review when it is determined that the potential for significant impacts exists. In the event that future cumulative projects would result in impacts to known or unknown tribal cultural resources, impacts to such resources would be addressed on a case-by-case basis, and would likely be subject to mitigation measures similar to those imposed for this project as a result of the CEQA process. Cumulative impacts to tribal cultural resources would therefore be significant but mitigable. The replacement of an existing crossing will not drive buildout of the region beyond the existing conditions. Cumulative impacts to TCRs as a result of this bridge replacement Project is expected to be less than significant.

As described under Impact TCR-1, the Project could result in significant impacts without mitigation to unknown TCRs. Mitigation Measures TCR-1 through TCR-5 would reduce impacts to less than significant. Therefore, the Project's contribution to significant cumulative impacts to TCRs, with mitigation, would not be cumulatively considerable.

This page intentionally left blank.

Utilities and Service Systems Table of Contents

| | | |
|--------|--|---------|
| 4.18 | Utilities and Service Systems | 4.18-1 |
| 4.18.1 | Setting..... | 4.18-1 |
| 4.18.2 | Water Regulatory Setting | 4.18-3 |
| 4.18.3 | Wastewater Regulatory Setting..... | 4.18-5 |
| 4.18.4 | Stormwater Drainage Regulatory Setting..... | 4.18-6 |
| 4.18.5 | Electric Power and Natural Gas Regulatory Setting..... | 4.18-6 |
| 4.18.6 | Telecommunication Regulatory Setting | 4.18-7 |
| 4.18.7 | Solid Waste Regulatory Setting | 4.18-7 |
| 4.18.8 | Impact Analysis | 4.18-10 |
| 4.18.9 | Cumulative Impacts | 4.18-12 |

Tables

| | | |
|--------------|---------------------------------------|--------|
| Table 4.18-3 | Solid Waste Disposal Operations | 4.18-2 |
|--------------|---------------------------------------|--------|

4.18 Utilities and Service Systems

This section assesses impacts associated with water, wastewater, stormwater, electricity, natural gas, telecommunications, and solid waste associated with Project implementation.

4.18.1 Setting

a. Water Supply

Various water districts provide water supply service in unincorporated Sonoma County. The Project site is served by the Sweetwater Springs Water District.

b. Wastewater Collection and Treatment

Various wastewater districts provide wastewater collection and treatment services in unincorporated Sonoma County. The Project site is served by the Russian River County Sanitation District.

c. Stormwater Drainage

The existing stormwater drainage flow for the Project site currently utilizes stormwater drains. These storm drain inlets would be relocated in accordance with the new horizontal geometry and stormwater treatment elements would be included in compliance with regulatory requirements for the construction and operation phases of the Project.

d. Electric Power

Either Sonoma Clean Power (SCP) or Pacific Gas and Electric Company (PG&E) serve Sonoma County residences. PG&E is responsible for all electric delivery and maintaining the electric grid, and SCP provides an optional electric generation service (customers can opt out of SCP's electric generation service). SCP provides electricity from cleaner power sources with lower greenhouse gas (GHG) emissions than PG&E. Energy is discussed in more detail in Section 4.6, *Energy*. Existing overhead power lines and utility pole located at the entrance to the Monte Rio Recreation and Parks District (MRRPD) Community Center parking lot would be relocated behind the proposed sidewalk. This relocation would include all overhead electrical and telecommunication lines joining at that power pole.

e. Natural Gas

California relies on out-of-state natural gas imports for nearly 90 percent of its natural gas supply. The California Energy Commission (CEC) estimates that 45 percent of the natural gas burned across the state is used for electricity generation, and much of the remainder is consumed in the residential (21 percent), industrial (25 percent), and commercial (9 percent) sectors. Building and appliance energy efficiency standards account for up to 39 percent in natural gas demand savings since 1975 (CEC 2020a).

The county is in PG&E's natural gas service area, which spans central and northern California (CEC 2020b). In 2018, PG&E customers consumed 4.8 billion therms of natural gas. Residential users accounted for approximately 38 percent of PG&E's natural gas consumption (CEC 2018a). The remainder was used for industry (37 percent), commercial buildings (19 percent), mining and

construction (4 percent), other commercial (1.2 percent), and agricultural and water pump accounts (1 percent) (CEC 2018a). In 2018, Sonoma County users accounted for approximately 2.3 percent of PG&E’s total natural gas consumption across the entire service area (CEC 2018b).

PG&E’s service area is equipped with approximately 6,700 miles of gas transmission pipelines as 42,000 miles of gas distribution pipelines. Existing gas lines at the current bridge would be relocated to the new bridge.

f. Telecommunication

In California, approximately 98 percent of households have access to telecommunication infrastructure, including telephone and cable access (California Cable & Telecommunications Association 2020). The county is in the 707 area code and Local Access and Transport Area 1 (California Public Utilities Commission [CPUC] 2010). A Local Access and Transport Area is a geographical area within which a divested Regional Bell Operating Company is permitted to offer exchange telecommunications and exchange access services (CPUC 2020a).

Overhead telecommunication lines will be relocated to accommodate the new bridge alignment and geometry.

g. Solid Waste

The contractor selected for constructing the Project would provide solid waste hauling for the Project activities. Table 4.18-3 provides the active solid waste disposal sites and transfer stations that would accept waste from construction of the Project, and the permitted and remaining capacities of each site. Nearly all solid waste generated in the county is transported to and disposed of at the Central Disposal Site, which is southwest of Cotati, and operated by Republic Services of Sonoma County, Inc. The landfill and facility site comprise 398 acres. Approximately 173 acres of the site are permitted for disposal (California Department of Resources Recycling and Recovery [CalRecycle] 2020c).

Table 4.18-1 Solid Waste Disposal Operations

| Solid Waste Disposal Operation | Operation Type | Type of Waste Accepted | Total Permitted Capacity | Average Throughput | Remaining Capacity | Expected Closure Year |
|-----------------------------------|-------------------|--|--------------------------|-----------------------|------------------------|-----------------------|
| Central | Disposal | Agricultural, C/D, | 2,500 tpd | 1,097 tpd | 1,403 tpd | 2043 |
| Disposal Site | Site | industrial, mixed municipal, tires, wood waste, other designated, sludge (BioSolids) | 32,650,000 cy | n/a | 9,181,519 cy | |
| Annapolis Transfer Station | Transfer Station | Agricultural, C/D, green materials, industrial, mixed municipal | 99.9 tpd 25,245 tpy | 14.7 tpd 3,050 tpy | 85.2 tpd 22,195 tpy | n/a |
| Atlas Tree Surgery Reduction Yard | Private (Compost) | Green materials, wood waste | 500 tpd 182,500 tpy | 90 tpd n/a | 422 tpd n/a | n/a |
| Grab N’ Grow | Private (Compost) | Agricultural, green materials, manure | 69 cy/d 90,000 cy/yr | 0.1 cy/d n/a | 68.9 cy/d n/a | n/a |

| Solid Waste Disposal Operation | Operation Type | Type of Waste Accepted | Total Permitted Capacity | Average Throughput | Remaining Capacity | Expected Closure Year |
|--|-------------------|--|--------------------------|--------------------|--------------------|-----------------------|
| Airport Landfill Chip & Grind Operation | Private (Compost) | Green materials, wood waste | 199 tpd 72,635 tpy | n/a n/a | n/a n/a | n/a |
| Annapolis Chip & Grind Operation | Private (Compost) | Agricultural, C/D, green materials, wood waste | 199 tpd 36,000 tpy | n/a n/a | n/a n/a | n/a |
| Atlas Tree Processing Yard | Private (Compost) | Green materials, wood waste | 200 tpd 72,999 tpy | n/a n/a | n/a n/a | n/a |
| Atlas Tree Waste Recycling | Private (Compost) | Green materials, wood waste | 200 cy/d 50,000 cy/yr | n/a n/a | n/a n/a | n/a |
| Daniel O. Davis, Inc. | Private (Compost) | C/D, wood waste | 1,500 tpm 18,000 tpy | n/a n/a | n/a n/a | n/a |
| DenBeste Yard & Garden, Inc. | Private (Compost) | Green materials, wood waste | 200 tpd 73,000 tpy | n/a n/a | n/a n/a | n/a |
| Dolcini Brothers Composting Operation Ag | Private (Compost) | Agricultural, green materials | 500 cy/d 50,000 cy/yr | n/a n/a | n/a n/a | n/a |
| Pruitt Transload Facility | Private (Compost) | Green materials, wood waste | 99 tpd 36,135 tpy | n/a n/a | n/a n/a | n/a |
| SCWS Wood Processing Operation | Private (Compost) | Green materials, wood waste | 199 tpd 72,966 tpy | n/a n/a | n/a n/a | n/a |
| Tierra Vegetables | Private (Compost) | Green materials | 10 cy/d 1,000 cy/yr | n/a n/a | n/a n/a | n/a |
| WMTF | Private (Compost) | Green materials, mixed municipal, other designated | 15 tpd 4,961 tpy | n/a n/a | n/a n/a | n/a |

Notes: C/D = construction and demolition; tpd = tons per day; tpy = tons per year; n/a = not available; cy/d = cubic yards per day; cy/yr = cubic yards per year; tpm = tons per month; cy = cubic yards

Source: CalRecycle 2020c

4.18.2 Water Regulatory Setting

This regulatory setting discussion is specific to the assessment of water supply availability and reliability. Regulations and policies pertaining to water quality and potable drinking water standards are discussed in Section 4.10, *Hydrology and Water Quality*.

a. Federal

Clean Water Act

The federal Clean Water Act, enacted by Congress in 1972 and amended several times since, is the primary federal law that regulates water quality in the United States. It forms the basis for several State and local laws throughout the country. The Clean Water Act established the basic structure for regulating discharges of pollutants into the waters of the United States. The Clean Water Act gave the U.S. Environmental Protection Agency the authority to implement federal pollution control programs, such as setting water quality standards for contaminants in surface water, establishing wastewater and effluent discharge limits for various industry contaminants in surface water, establishing wastewater and effluent discharge limits for various industry categories, and imposing requirements for controlling nonpoint-source pollution. At the federal level, the Clean Water Act is administered by the U.S. Environmental Protection Agency and USACE. At the state and regional levels in California, the act is administered and enforced by the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCB).

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) regulates public water systems (PWS) that supply drinking water. 42 United States Code Section 300(f) et seq.; 40 Code of Federal Regulations (CFR) Section 141 et seq. The principal objective of the federal SDWA is to ensure that water from the tap is potable (safe and satisfactory for drinking, cooking, and hygiene). The main components of the federal SDWA are to:

1. Ensure that water from the tap is potable
2. Prevent contamination of groundwater aquifers that are the main source of drinking water for a community
3. Regulate the discharge of wastes into underground injection wells pursuant to the Underground Injection Control program (see 40 CFR Section 144)
4. Regulate distribution systems

b. State

California Safe Drinking Water Act

The California SDWA (Health & Safety Code Section 116270 et seq.; 22 Cal. Code Regs. Section 64400 et seq.) regulates drinking water more rigorously than the federal law. Like the Federal SDWA, California requires that primary and secondary maximum contaminant levels be established for pollutants in drinking water; however, some California maximum contaminant levels are more protective of health. The Act also requires the SWRCB to issue domestic water supply permits to public water systems.

Implementation of the federal SDWA is delegated to the State of California. The SWRCB enforces the federal and state SDWAs and regulates more than 7,500 PWSs across the state. The SWRCB's Division of Drinking Water oversees the State's comprehensive Drinking Water Program. The Drinking Water Program is the agency authorized to issue PWS permits.

Sustainable Groundwater Management Act

In September 2014, the governor signed legislation requiring that California's critical groundwater resources be sustainably managed by local agencies. The Sustainable Groundwater Management Act gives local agencies the power to sustainably manage groundwater and requires groundwater sustainability plans to be developed for medium- and high-priority groundwater basins, as defined by the DWR. Please refer to Section 4.10, *Hydrology and Water Quality*, for more detailed descriptions of the groundwater basins underlying the Project Site.

Urban Water Management Planning Act

In 1983, the California Legislature enacted the Urban Water Management Planning Act (Water Code, Section 10610 et seq.), which requires urban water suppliers to develop water management plans to actively pursue the efficient use of available supplies. Every five years, water suppliers are required to develop Urban Water Management Plans to identify short-term and long-term water demand management measures to meet growing water demands.

c. Local

Sonoma County General Plan

The County General Plan was adopted by the Sonoma County Board of Supervisors Resolution 08-0808 on September 23, 2008. The County General Plan includes broad goals and policies aimed at protecting the county's water supply and water quality and ensuring adequate water service is available.

Goal PF-1: Assure that water and wastewater services are available where necessary to serve planned growth and development without promoting unplanned growth.

Objective PF-1.3: Limit extension of public water and sewer services into rural areas.

Policy PF-1c: Give the highest priority for water and sewer improvement planning to those service providers whose capacity for accommodating future growth is most limited. These include the Occidental County Sanitation District, the Geyserville Water Works and Geyserville Sanitation Zone, the Sweetwater Springs Water District, Monte Rio, the Town of Windsor (water supply to the Airport Industrial Area), the California American Water Company (Larkfield-Wikiup), the Airport-Larkfield-Wikiup County Sanitation Zone, the Valley of the Moon Water District, and the Sonoma Valley Sanitation District, or any entities which may succeed these service providers.

Policy PF-1d: Require as part of discretionary project applications within a water or sewer service area written certification that either existing services are available or needed improvements will be made prior to occupancy.

Policy PF-1e: Avoid General Plan amendments that would increase demand for water supplies or wastewater treatment services in those urban areas where existing services cannot accommodate projected growth as indicated in Table LU-1 or any adopted master plan.

4.18.3 Wastewater Regulatory Setting

a. Federal Clean Water Act

The federal Clean Water Act is described in Section 4.18.2, *Water Regulatory Setting*.

b. State and Regional

Standards for wastewater treatment plant effluent are established using State and federal water quality regulations. After treatment, wastewater effluent is either disposed of or reused as recycled water. The RWQCBs set the specific requirements for community and individual wastewater treatment and disposal and reuse facilities through the issuance of Waste Discharge Requirements, required for wastewater treatment facilities under the California Water Code Section 13260.

The California Code of Regulations Title 22, Division 4, Chapter 3, Sections 60301 through 60355 are used to regulate recycled wastewater and are administered by the RWQCBs. Title 22 contains effluent requirements for four levels of wastewater treatment, from un-disinfected secondary recycled water to disinfected tertiary recycled water. Higher levels of treatment have higher effluent standards, allowing for a greater number of uses under Title 22, including irrigation of freeway landscaping, pasture for milk animals, parks and playgrounds, and vineyards and orchards for disinfected tertiary recycled water.

c. Local

Sonoma County General Plan

The County General Plan was adopted by the Sonoma County Board of Supervisors via Resolution 08-0808 on September 23, 2008. The County General Plan includes broad goals and policies aimed at protecting the county's water quality and ensuring adequate sewer service is available. In addition to the goals, objectives, and policies reproduced in Section 4.18.2(c), the following policies would apply to wastewater systems:

Objective PF-1.4: Plan for wastewater facilities adequate to serve the growth projected in the General Plan.

Policy PF-1a: Plan, design, and construct sewer services in accordance with projected growth except as provided in Policy LU-4d.

4.18.4 Stormwater Drainage Regulatory Setting

Regulations and policies pertaining to stormwater drainage are discussed in Section 4.10, *Hydrology and Water Quality*.

4.18.5 Electric Power and Natural Gas Regulatory Setting

As the State's primary energy policy and planning agency, the California Energy Commission (CEC) collaborates with State and federal agencies, utilities, and other stakeholders to develop and implement State energy policies. Since 1975, the CEC has been responsible for reducing the State's electricity and natural gas demand, primarily by adopting new Building and Appliance Energy Efficiency Standards that have contributed to keeping California's per capita electricity consumption relatively low. The CEC is also responsible for the certification and compliance of thermal power plants 50 megawatts and larger, including all project-related facilities in California (CEC 2020c).

The California Public Utilities Commission (CPUC) regulates investor-owned electric and natural gas utilities operating in California. The energy work responsibilities of the CPUC are derived from the California State Constitution, specifically Article XII, Section 3 and other sections more generally, numerous State legislative enactments and various Federal statutory and administrative requirements. The CPUC regulates natural gas utility service for approximately 10.8 million

customers that receive natural gas from PG&E and other natural gas utilities across California (CPUC 2020b).

Additional regulations and policies pertaining to electric power are discussed in Section 4.6, *Energy*.

4.18.6 Telecommunication Regulatory Setting

The CPUC develops and implements policies for the telecommunication industry. The Communications Division is responsible for licensing, registration and the processing tariffs of local exchange carriers, competitive local carriers, and non-dominant interexchange carriers. It is also responsible for registration of wireless service providers and franchising of video service providers. The Division tracks compliance with commission decisions and monitors consumer protection and service issues and Commission reliability standards for safe and adequate service. The Communications Division is responsible for oversight and implementation of the six public purpose Universal Service Programs (CPUC 2020c).

4.18.7 Solid Waste Regulatory Setting

a. Federal

Title 40 of the Code of Federal Regulations

Title 40 of the Code of Federal Regulations, Part 258 (Resource Conservation and Recovery Act, Subtitle D), contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the Federal landfill criteria.

b. State

Public Resources Code Chapters 476 (Assembly Bill 341) and 295 (Senate Bill 1383)

The purpose of Assembly Bill (AB) 341 of 2011 (PRC Chapter 476, Statutes of 2011) is to reduce GHG emissions by diverting commercial solid waste to recycling efforts and to expand the opportunity for additional recycling services and recycling manufacturing facilities in California. In addition to Mandatory Commercial Recycling, AB 341 sets a statewide goal for 75 percent disposal reduction by the year 2020.

SB 1383 of 2016 (PRC Chapter 395, Statutes of 2016) established the following goals: a 50-percent reduction in the level of the statewide disposal of organic waste from 2014 levels by 2020, and a 75-percent reduction in the level of the statewide disposal of organic waste from 2014 levels by 2025. This bill also authorized CalRecycle to adopt regulations, to take effect on or after January 1, 2022, to achieve these targets.

PRC 41780 (Assembly Bill 939)

AB 939 of 1989 (PRC 41780) requires cities and counties to prepare integrated waste management plans and to divert 50 percent of solid waste from landfills beginning in calendar year 2000 and each year thereafter. AB 939 also requires cities and counties to prepare source reduction and recycling elements as part of the integrated waste management plans. These elements are designed to develop recycling services to achieve diversion goals, stimulate local recycling in manufacturing, and stimulate the purchase of recycled products.

PRC Chapter 727 (Assembly Bill 1826)

AB 1826 of 2014 (PRC Chapter 727, Statutes of 2014) requires businesses that generate a specified amount of organic waste per week to arrange for recycling services for that waste, and that jurisdictions implement a recycling program to divert organic waste from businesses subject to the law. The jurisdictions must report to CalRecycle on their progress in implementing an organic waste recycling program. As of January 1, 2017, businesses that generate four cubic yards or more of organic waste per week shall arrange for organic waste recycling services.

PRC Chapter 343 (Senate Bill 1016)

SB 1016 of 2007 (PRC Chapter 343, Statutes of 2007) requires that 50 percent solid waste diversion requirement established by AB 939 be expressed in pounds per person per day. SB 1016 changed the CalRecycle review process for each municipality's integrated waste management plan. After an initial determination of diversion requirements in 2006 and establishing diversion rates for subsequent calendar years, the Board reviews a jurisdiction's diversion rate compliance in accordance with a specified schedule. Since January 1, 2018, the Board is required to review a jurisdiction's source reduction and recycling element and hazardous waste element once every two years.

c. Local

County General Plan

The Public Facilities and Services Element of the County General Plan identifies goals and policies related to solid waste, reproduced below.

Goal PF-2: Assure that park and recreation, public education, fire suppression and emergency medical, and solid waste services, and public utility sites are available to the meet future needs of Sonoma County residents.

Objective PF-2.9: Use the CoIWMP, and any subsequent amendments thereto, as the policy document for solid waste management in the County.

Policy PF-2a: Plan, design, and construct park and recreation, fire and emergency medical, public education, and solid waste services and public utilities in accordance with projected growth, except as provided in Policy LU-4d.

Policy PF-2b: Work with the Cities to provide park and recreation, public education, fire and emergency medical, and solid waste services as well as public utilities. Use proposed annexations, redevelopment agreements, revenue sharing agreements, and the CEQA process as tools to ensure that incorporated development pay its fair share toward provision of these services.

Countywide Integrated Waste Management Plan

The Countywide Integrated Waste Management Plan (CoIWMP), dated October 15, 2003, provides a solid waste disposal strategy through the year 2050. The plan includes the following goals, objectives, and policies to ensure adequate waste prevention, reuse, recycling, composting, and disposal services.

Goal A: In order to help ensure the sustainability of our communities and to conserve natural resources and landfill capacity, the Sonoma County Waste Management Agency (SCWMA), County

and the Cities will continue to improve their municipal solid waste management system through emphasis on the solid waste management hierarchy of waste prevention (source reduction), reuse, recycling, composting and disposal.

Goal B: The County and the Cities will exercise regional cooperation in the achievement of solid waste planning objectives through the SCWMA.

Goal C: The solid waste management system in Sonoma County will be planned and operated in a manner to protect public health, safety, and the environment.

Objective: The County and the Cities will achieve a 50 percent diversion (see Figure 1-1) of wastes being disposed of in County landfills by the year 2003 and a 70 percent diversion rate (see Figure 1-2) by 2015 based on 1990 rates.

Objective: The SCWMA will achieve measurable reduction of landfill disposal of prohibited wastes documented by waste characterization studies at the end of the short term and medium-term planning periods.

Objective: The County will develop disposal capacity for solid waste not handled by other elements of the management hierarchy for a 50-year horizon. Disposal capacity is addressed in the Siting Element of the CoIWMP.

2.4.1 Source Reduction Implementation Policy: The SCWMA, County and the Cities will encourage and support the use of waste minimization practices for business, government agencies, and the public by distributing information on the availability of waste minimization options.

2.4.1 Source Reduction Implementation Policy: The SCWMA, the County, and the Cities will continue to encourage and support backyard composting for businesses, residences, and government agencies by providing information and technical assistance.

2.4.2 Recycling Implementation Policy: The County and the Cities will provide access to residential recycling programs for all households, including single-family, multi-family, and mobile homes, that subscribe to garbage services by the end of the short-term planning period.

2.4.3 Composting Implementation Policy: The SCWMA, County and the Cities will provide access to composting opportunities through implementation of composting facilities and programs which may be regional or local, public or private.

2.4.4 Special Waste Implementation Policy: The SCWMA, County and the Cities will promote recycling of construction and demolition debris through education, regulation and economic incentives.

2.4.4 Special Waste Implementation Policy: The County will provide alternative disposal options for recyclable items or materials such as, but not limited to, yard debris, recyclable wood waste, whole tires, and appliances and ban the landfill disposal of these items.

2.4.6 Solid Waste Management Implementation Policy: Satisfy the AB 939 solid waste planning and diversion mandates in a manner that is consistent with the objectives of the community, as reflected by the deliberations and documents of the AB 939 Local Task Force and Sonoma County Waste Management Agency.

4.18.8 Impact Analysis

a. Methodology and Significance Thresholds

The proposed Project would have a significant effect on utilities/utility systems if it would result in any of the conditions, as listed in Appendix G of the *CEQA Guidelines*:

1. Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects
2. Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years
3. Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Projects' projected demand in addition to the provider's existing commitments
4. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals
5. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste

b. Project Impacts and Mitigation Measures

Threshold: Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Would the Project have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years?

Impact UTIL-1 IMPACTS RELATED TO UTILITIES AND UTILITY SERVICES, INCLUDING NEW OR EXPANDED WATER, WASTEWATER TREATMENT OR STORMWATER DRAINAGE, ELECTRIC POWER, NATURAL GAS, OR TELECOMMUNICATIONS FACILITIES WOULD BE LESS THAN SIGNIFICANT THE PROJECT ONLY REQUIRES MINIMAL WATER SUPPLIES FOR MAINTENANCE AND CLEANING, SUFFICIENT SUPPLIES ARE AVAILABLE AT THE SITE. THIS IMPACT IS LESS THAN SIGNIFICANT.

All utilities currently on the existing bridge would require relocation to the proposed new bridge. These utilities include electrical lines, telecommunication conduits, water, and gas lines. Decorative streetlights would be provided on the proposed bridge, in a style similar to those on the existing bridge. Improvements of existing utilities would be coordinated with utility owners to identify the rights and relocation needs. Existing overhead power pole and guywires located on Bohemian Highway at the entrance to the MRRPD Community Center/Monte Rio Fishing Access parking lot would be relocated behind the proposed sidewalk. This relocation would include all overhead electrical and telecommunication lines joining at that power pole. Existing storm drain inlets would be relocated in accordance with the new horizontal geometry and stormwater treatment elements would be included in compliance with regulatory requirements.

Removal and relocation of all utilities will be done in coordination with all applicable utility providers and done in accordance with all applicable regulations. There would be no significant environmental effects associated with the removal and relocation of utilities.

Operation and maintenance of the replacement bridge following construction would not be expected to use additional water supplies. Future routine maintenance may include pressure washing and other minor water uses.

Mitigation Measure

No mitigation measures would be required.

Significance After Mitigation

Impact would be less than significant without mitigation.

Threshold: Would the Project result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?

Impact UTIL-2 THE PROJECT WILL NOT REQUIRE WASTEWATER SERVICE. THERE IS NO IMPACT TO WASTEWATER SERVICES.

The Project will not require determination by the wastewater treatment provider. No increase in capacity is necessary as the replacement of an existing structure is not a growth inducing activity. No change in demand will result due to the Project.

Mitigation Measures

No Impact

Threshold: Would the Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Impact UTIL-3 THE PROJECT WILL NOT GENERATE SOLID WASTE IN EXCESS OF STATE OR LOCAL STANDARDS, OR THAT WOULD OTHERWISE OVERWHELM THE CAPACITY OF LOCAL INFRASTRUCTURE OR IMPAIR THE ATTAINMENT OF SOLID WASTE REDUCTION GOALS. THIS IMPACT IS LESS THAN SIGNIFICANT.

Solid waste generated by the Project would be limited to construction debris, including asphalt and concrete, generated by excavation of the existing roadway and construction of the new alignments. Sonoma County has a solid waste management program in place that provides solid waste collection and disposal services for the entire County. The program can accommodate the permitted collection and disposal of the waste that will result from the proposed Project.

Mitigation Measures

Less than significant.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold: Would the Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Impact UTIL-4 THE PROJECT WILL NOT GENERATE SOLID WASTE IN EXCESS OF STATE OR LOCAL STANDARDS, OR THAT WOULD OTHERWISE OVERWHELM THE CAPACITY OF LOCAL INFRASTRUCTURE OR IMPAIR THE ATTAINMENT OF SOLID WASTE REDUCTION GOALS. THIS IMPACT IS LESS THAN SIGNIFICANT.

Solid waste generated by the Project would be limited to construction debris, including asphalt and concrete, generated by excavation of the existing roadway and construction of the new alignments. Sonoma County has a solid waste management program in place that provides solid waste collection and disposal services for the entire County. The program can accommodate the permitted collection and disposal of the waste that will result from the proposed Project.

Mitigation Measures

Less than significant.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold: Would the Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Impact UTIL-5 THE PROJECT WILL NOT GENERATE SOLID WASTE IN EXCESS OF STATE OR LOCAL STANDARDS, OR THAT WOULD OTHERWISE OVERWHELM THE CAPACITY OF LOCAL INFRASTRUCTURE OR IMPAIR THE ATTAINMENT OF SOLID WASTE REDUCTION GOALS. THERE IS NO IMPACT.

The Project would conform to all applicable state and federal solid waste regulations.

Mitigation Measures

None required.

Significance After Mitigation

There would be no impact, no mitigation required.

4.18.9 Cumulative Impacts

A project's environmental impacts are "cumulatively considerable" if the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the

effects of other current projects, and the effects of probable future projects.” (*CEQA Guidelines* Section 15065[a][3].) The geographic scope for cumulative utilities and service systems impacts is the County. This geographic area is appropriate because impacts from solid waste disposal sites would be dispersed across various County disposal sites. Impacts related to utilities and service systems would be temporary and associated with the construction of the new bridge and removal of the existing bridge. Future operational impacts from utilities and service systems would be related to future maintenance, similar to the existing baseline of the current bridge. Once completed, the operation of the new bridge would not generate significant cumulative impacts from solid waste disposal, wastewater, or other utilities or service systems. The cumulative impacts to these services would be less than significant.

This page intentionally left blank.

Wildfire Table of Contents

| | | |
|--------|--------------------------|---------|
| 4.19 | Wildfire..... | 4.19-1 |
| 4.19.1 | Setting..... | 4.19-1 |
| 4.19.2 | Regulatory Setting | 4.19-6 |
| 4.19.3 | Impact Analysis | 4.19-10 |
| 4.19.4 | Cumulative Impacts | 4.19-12 |

Figures

| | | |
|---------------|--|--------|
| Figure 4.19-1 | Fire Hazard Severity Zones – Countywide | 4.19-4 |
| Figure 4.19-2 | Fire Hazard Severity Zones – Project Site..... | 4.19-5 |

4.19 Wildfire

The analysis in this section addresses the potential for the proposed Project to exacerbate wildfire risks. The requirement to evaluate wildfire hazards was added to the California Environmental Quality Act (CEQA) Guidelines along with a number of revisions that went into effect in late 2018.

4.19.1 Setting

a. Overview of Wildfire

A wildfire is an uncontrolled fire in an extensive area of combustible vegetation. Wildfires differ from other fires in that they take place in areas of grassland, woodlands, brushland, scrubland, peatland, and other wooded areas that act as a source of fuel, or combustible material. Buildings may become involved if a wildfire spreads to adjacent communities. The primary factors that increase an area's susceptibility to wildfire include slope and topography, vegetation type and condition, and weather and atmospheric conditions. Extreme wildfire events are expected to increase in frequency by 20 percent by 2050 and by 50 percent by the end of the century (County of Sonoma 2017). The Office of Planning and Research has recognized that although high-density structure-to-structure loss can occur, structures in areas with low- to intermediate-density housing were most likely to burn, potentially due to intermingling with wildland vegetation or difficulty of firefighter access. Fire frequency also tends to be highest at low to intermediate housing density, at least in regions where humans are the primary cause of ignitions (California Natural Resources Agency 2018).

The indirect effects of wildfires can be catastrophic. In addition to stripping the land of vegetation and destroying forest resources, large, intense fires can harm the soil, waterways, and the land itself. Soil exposed to intense heat may lose its capability to absorb moisture and support life. Exposed soils erode quickly and enhance siltation of rivers and streams, thereby enhancing flood potential, harming aquatic life, and degrading water quality. Lands stripped of vegetation are also subject to increased debris flow hazards.

Between 1964 and 2015, Sonoma County experienced 18 large or costly wildfires (County of Sonoma 2017). Most recently, the 2017 Sonoma Complex Fires caused 24 deaths, burned over 112,000 acres, and destroyed about 5,300 homes; the 2019 Kincade Fire burned 77,758 acres, destroyed 374 structures, including 174 residences, and damaged 60 additional structures, including 34 residences (California Department of Forestry and Fire Protection [CAL FIRE] 2019a); the Glass Fire of 2020 burned over 67,000 acres, destroyed 1,555 structures, and damaged an additional 282 structures across both Napa and Sonoma counties (CAL FIRE 2020); and the multi-county LNU Lightning Complex fires of 2020 burned over 360,000 acres and destroyed 1,491 structures. The mountainous, highly combustible areas in eastern Sonoma County have a Fire Hazard Severity Zone (FHSZ) ranking of "very high" (CAL FIRE 2007a) and, therefore, are most susceptible to wildfires. Communities near this area include Cloverdale, Geyserville, eastern Santa Rosa, and Sonoma.

Slope and Aspect

According to CAL FIRE, sloping land increases susceptibility to wildfire because fire typically burns faster up steep slopes and they may hinder firefighting efforts (CAL FIRE 2007b). Following severe wildfires, sloping land is also more susceptible to landslide or flooding from increased runoff during substantial precipitation events. Aspect is the direction that a slope faces, and it determines how

much radiated heat the slope will receive from the sun. Slopes facing south to southwest will receive the most solar radiation; thus they are warmer and the vegetation drier than on slopes facing a northerly to northeasterly direction, increasing the potential for wildfire ignition and spread (University of California 2018).

The Project site is located near the urban development of Monte Rio, adjacent to steep forested hills that characterize much of western Sonoma County. Steeper slopes (greater than 15 percent) are more likely to experience fast wildfire spread, while flatter slopes (5 percent or less) are not as likely to experience fast wildfire spread.

Vegetation

Vegetation is fuel to a wildfire and it changes over time with seasonal growth and die-back. The relationship between vegetation and wildfire is complex, but generally some vegetation is naturally fire resistant, while other vegetation is extremely flammable. It is worth noting that some plant types in California landscapes are fire resistant, while others are actually fire dependent for their seed germination cycles. Wildfire behavior depends on the type of fuels present, such as ladder fuels, surface fuels, and aerial fuels. Ladder fuels provide a path for a surface fire to climb upward into the crowns of trees; surface fuels include grasses, logs, and stumps low to the ground; and aerial fuels include limbs, foliage, and branches not in contact with the ground (CAL FIRE 2020a). Weather and climate conditions, including drought cycles, can lead to dry vegetation with low moisture content, increasing its flammability.

Vegetation cover in the Project site was identified in the Biological Survey Area (BSA). Based on the 2013 Sonoma VegMap, the primary vegetation cover classes are *Fraxinus latifolia* forest alliance and *Salix exigua* shrubland alliance. These areas, while heavily vegetated, are located on generally flat slopes and make up a wet, riparian forest cover type. Other major cover classes include the developed land, sandy beach and open water of the Russian River.

Weather and Atmospheric Conditions

Wind, temperature, and relative humidity are the most influential weather elements in fire behavior and susceptibility (National Parks Service 2017). Fire moves faster under hot, dry, and windy conditions. Wind may also blow embers ahead of a fire, causing its spread. Drought conditions lead to extended periods of excessively dry vegetation, increasing the fuel load and ignition potential.

The Western Regional Climate Center maintains numerous weather monitoring stations throughout the County. According to data collected at weather stations near the Project area, most precipitation is received from November through March, with an average annual rainfall ranging between 47 and 54 inches (Western Regional Climate Center 2016). May through September is the driest time of the year and coincides with what has traditionally been considered the fire season in California. However, increasingly persistent drought and climatic changes in California have resulted in drier winters, and fires during the autumn, winter, and spring months are becoming more common. Prevailing winds in Sonoma are generally from the northwest to the southeast (National Oceanic and Atmospheric Administration 2020).

b. Wildfire Hazards

In California, responsibility for wildfire prevention and suppression is shared by federal, state, and local agencies. Federal agencies are responsible for federal lands in Federal Responsibility Areas. The State of California has determined that some non-federal lands in unincorporated areas with

watershed value are of statewide interest and have classified those lands as State Responsibility Areas (SRA), which are managed by CAL FIRE (US Department of the Interior, US Department of Agriculture, and CAL FIRE 2018). All incorporated areas and other unincorporated lands are classified as Local Responsibility Areas (LRA).

CAL FIRE is required by law to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors (Public Resources Code Sections 4201-4204 and California Government Code Sections 51175-89). As described above, the primary factors that increase an area's susceptibility to fire hazards include slope, vegetation type and condition, and atmospheric conditions. CAL FIRE maps fire hazards based on zones, referred to as FHSZs. CAL FIRE maps three zones in SRA: 1) Moderate FHSZs; 2) High FHSZs; and 3) Very High FHSZs. Only the Very High FHSZs are mapped in LRA. Each of the zones influence how people construct buildings and protect property to reduce risk associated with wildfires. Under state regulations, areas within Very High FHSZs must comply with specific building and vegetation management requirements intended to reduce property damage and loss of life within these areas. Figure 4.19-1 shows the FHSZs across Sonoma County and Figure 4.19-2 shows the FHSZs at the Project site. FHSZs within the Project area are moderate in the flat, developed areas along the Russian River corridor, and high in the steep forested hills above Monte Rio.

Figure 4.19-1 Fire Hazard Severity Zones – Countywide

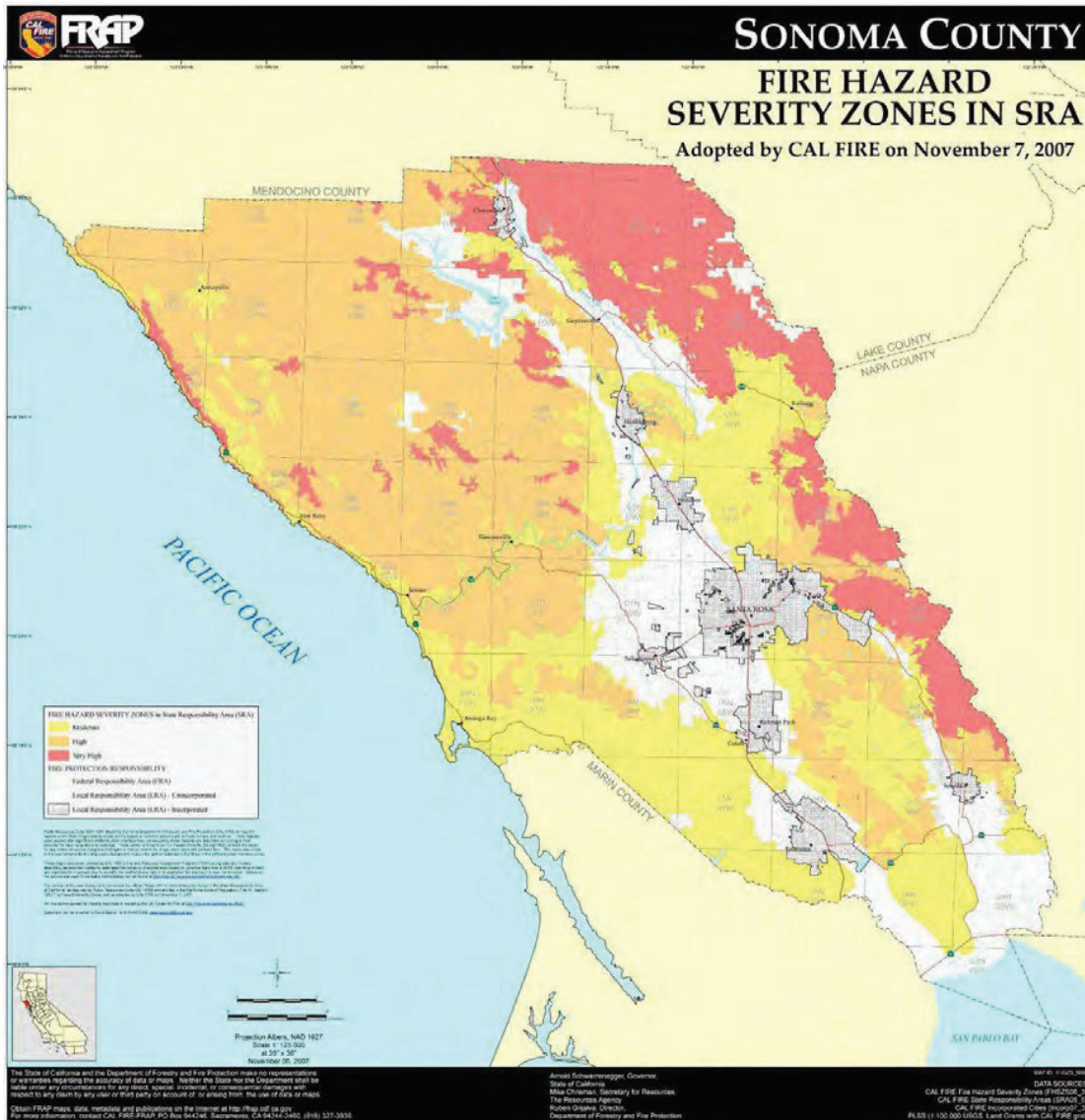
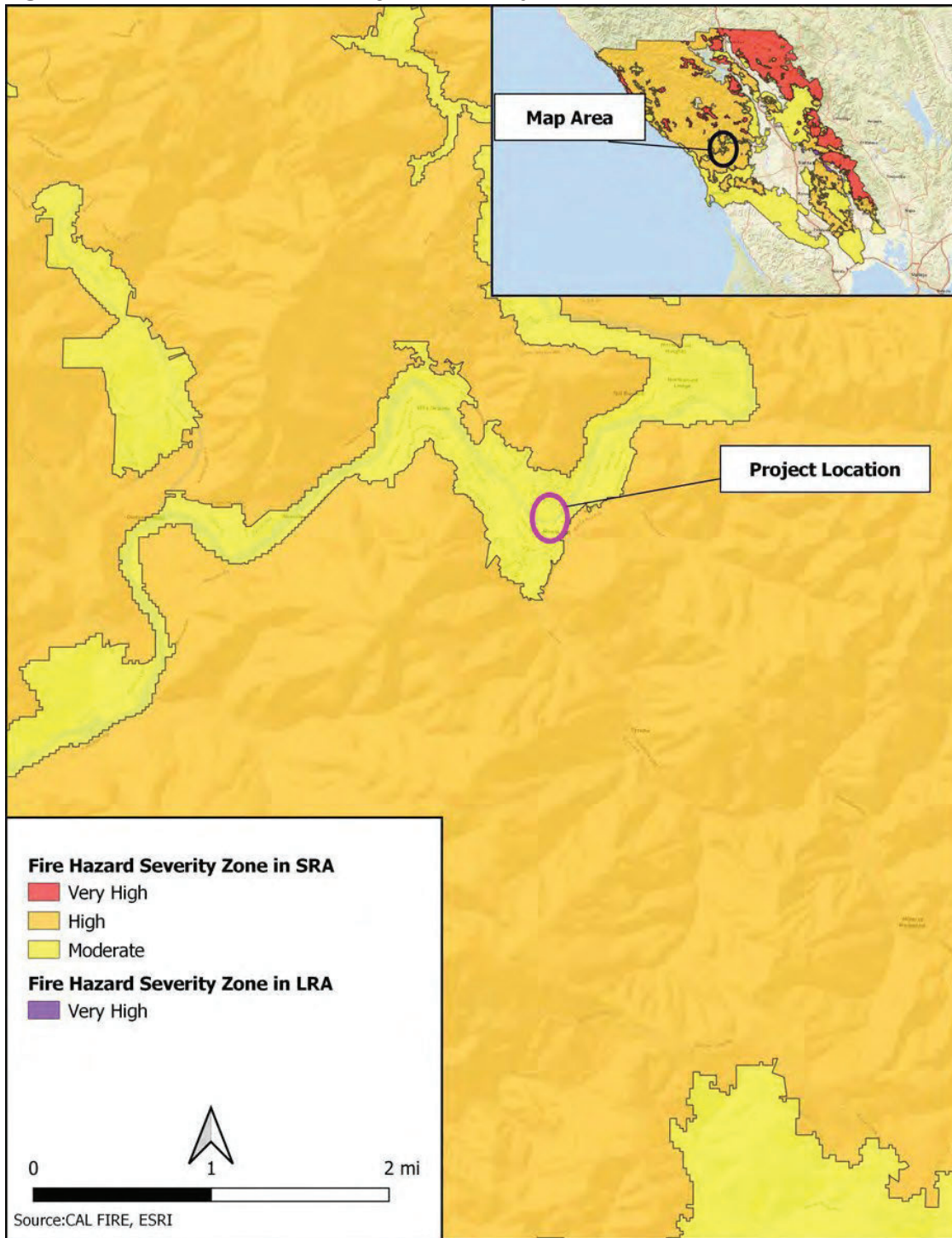


Figure 4.19-2 Fire Hazard Severity Zones – Project Site



4.19.2 Regulatory Setting

a. Federal Regulations

The Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 requires a state-level mitigation plan as a condition of disaster assistance. There are two different levels of state disaster plans: “Standard” and “Enhanced.” States that develop an approved Enhanced State Plan can increase the amount of funding available through the Hazard Mitigation Grant Program. The Act also established new requirements for local mitigation plans.

National Fire Plan

The National Fire Plan was developed in August 2000, following a historic wildfire season. Its intent is to establish plans for active response to severe wildfires and their impacts to communities while ensuring sufficient firefighting capacity. The plan addresses firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability.

b. State Regulations

California Board of Forestry

The Board of Forestry maintains fire safe road regulations, as part of Title 14 of the California Code of Regulations (CCR). This includes requirements for road width, surface treatments, grade, radius, turnarounds, turnouts, structures, driveways, and gate entrances. These regulations are intended to ensure safe access for emergency wildland fire equipment and civilian evacuation.

California Fire and Building Codes (2019)

The California Fire Code is found in Title 24, part 9 of the California Code of Regulations (CCR). It establishes the minimum requirements consistent with nationally-recognized good practices to safeguard public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structure, and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. It is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The California Fire Code regulates the use, handling and storage requirements for hazardous materials at fixed facilities. The California Fire Code and the California Building Code (CBC) use a hazard classification system to determine what protective measures are required to protect fire and life safety. These measures may include construction standards, separations from property lines and specialized equipment. To ensure that these safety measures are met, the California Fire Code employs a permit system based on hazard classification. The provisions of this Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure or any appurtenances connected or attached to such building structures throughout California.

Title 24, part 9, Chapter 7 addresses fire-resistances-rated construction; Fire Code Chapter 8 addresses fire related Interior finishes; Fire Code Chapter 9 addresses fire protection systems; and Fire Code Chapter 10 addresses fire related means of egress, including fire apparatus access road

width requirements. Fire Code Section 4906 also contains existing regulations for vegetation and fuel management to maintain clearances around structures. In addition, the CBC (Title 24 CCR Part 2), Chapter 7A addresses materials and construction methods for exterior wildfire exposure. These requirements establish minimum standards to protect buildings located in FHSZs within SRAs and Wildland-Urban Interface (WUI) Fire Areas. This code includes provisions for ignition-resistant construction standards for new buildings in zones with dense housing adjacent to flammable vegetation.

The California Fire Plan

The Strategic Fire Plan for California is the State's road map for reducing the risk of wildfire. The most recent version of the Plan was finalized in August 2018 and directs each CAL FIRE Unit to revise and update its locally-specific Fire Management Plan (CAL FIRE 2018). These plans assess the fire situation within each of the 21 CAL FIRE units and six contract counties. These plans address wildfire protection areas, initial attack success, assets and infrastructure at risk, pre-fire management strategies, and accountability within their geographical boundaries.

California Office of Emergency Services

The California Office of Emergency Services (CalOES) prepares the State of California Multi-Hazard Mitigation Plan (SHMP). The SHMP identifies hazard risks and includes a vulnerability analysis and a hazard mitigation strategy. The SHMP is federally required under the Disaster Mitigation Act of 2000 for the State to receive Federal funding. The Disaster Mitigation Act of 2000 requires a State mitigation plan as a condition of disaster assistance.

State Emergency Plan

The foundation of California's emergency planning and response is a statewide mutual aid system which is designed to ensure that adequate resources, facilities, and other support is provided to jurisdictions whenever their own resources prove to be inadequate to cope with a given situation.

The California Disaster and Civil Defense Master Mutual Aid Agreement (California Government Code Sections 8555–8561) requires signatories to the agreement to prepare operational plans to use within their jurisdiction, and outside their area. These plans include fire and non-fire emergencies related to natural, technological, and war contingencies. The State of California, all State agencies, all political subdivisions, and all fire districts signed this agreement in 1950.

Section 8568 of the California Government Code, the "California Emergency Services Act," states that "the State Emergency Plan shall be in effect in each political subdivision of the state, and the governing body of each political subdivision shall take such action as may be necessary to carry out the provisions thereof." The Act provides the basic authorities for conducting emergency operations following the proclamations of emergencies by the Governor or appropriate local authority, such as a City Manager. The provisions of the act are further reflected and expanded on by appropriate local emergency ordinances. The Act further describes the function and operations of government at all levels during extraordinary emergencies, including war.

All local emergency plans are extensions of the State of California Emergency Plan. The State Emergency Plan conforms to the requirements of California's Standardized Emergency Management System (SEMS), which is the system required by Government Code 8607(a) for managing emergencies involving multiple jurisdictions and agencies (CalOES 2020). The SEMS incorporates the functions and principles of the Incident Command System (ICS), the Master Mutual Aid Agreement,

existing mutual aid systems, the operational area concept, and multi-agency or inter-agency coordination. Local governments must use SEMS to be eligible for funding of their response-related personnel costs under state disaster assistance programs. The SEMS consists of five organizational levels that are activated as necessary, including: field response, local government, operational area, regional, and state. CalOES divides the state into several mutual aid regions. The County of Sonoma is located in Mutual Aid Region II, which includes Del Norte, Humboldt, Mendocino, Sonoma, Lake, Napa, Marin, Solano, Contra Costa, San Francisco, San Mateo, Alameda, Santa Clara, Santa Cruz, San Benito, and Monterey Counties (CalOES 2019).

Government Code Sections 65302 and 65302.5, Senate Bill 1241 (Kehoe) of 2012

Senate Bill (SB) 1241 requires cities and counties to address fire risk in SRAs and Very High FHSZs in the safety element of their general plans. The bill also amended CEQA to direct amendments to the CEQA Guidelines Appendix G environmental checklist to include questions related to fire hazard impacts for projects located in or near lands classified as SRAs and Very High FHSZs. In adopting these Guidelines amendments, the Governor’s Office of Planning and Research recognized that generally, low-density, leapfrog development may create higher wildfire risks than high-density, infill development.¹

California Public Utilities Commission General Order 166

General Order 166 Standard 1.E requires that investor-owned utilities (IOU) develop a Fire Prevention Plan which describes measures that the electric utility will implement to mitigate the threat of power-line fires generally. Additionally, this standard requires that IOUs outline a plan to mitigate power line fires when wind conditions exceed the structural design standards of the line during a Red Flag Warning in a high fire threat area. Fire Prevention Plans created by IOUs are required to identify specific parts of the utility’s service territory where the conditions described above may occur simultaneously. Standard 11 requires that utilities report annually to the California Public Utilities Commission (CPUC) regarding compliance with General Order 166 (CPUC 2017b). In compliance with Standard 1.E of this General Order, Pacific Gas and Electric Company adopted a Fire Prevention Plan dated October 31, 2018. Pacific Gas and Electric Company developed an interim fire threat map that shows very high fire threats near existing overhead lines along the eastern border of Sonoma County, none of which are directly adjacent to any of the Potential Sites (CPUC 2018b).

c. Regional and Local Regulations

Sonoma County Community Wildfire Protection Plan

The Sonoma County Community Wildfire Protection Plan was developed with input from many organizations, including state and local fire departments, federal agencies, community groups, and land management agencies. The purpose of the Sonoma County Community Wildfire Protection Plan is to help reduce the potential loss of human life and damage to property, natural and cultural resources within Sonoma County due to wildfire. The plan describes the wildfire risk and potential throughout the County, designates WUI areas, discusses assets at risk throughout the County, provides mitigation strategies, and discusses resources available (Fire Safe Sonoma 2016).

¹ “Leapfrog development” describes the construction of new development at a distance from existing developed areas, with undeveloped land between the existing and new development.

Sonoma County Hazard Mitigation Plan

The Sonoma County Hazard Mitigation Plan incorporates wildfire hazard mitigation principles and practices into the routine government activities and functions of the County. The Plan recommends specific actions that are designed to protect people and community assets from losses to those hazards that pose the greatest risk. Mitigation programs and activities identified in the Plan include fuel reduction and vegetation management, roadside chipper service, grant programs for fire management assistance, and fire prevention fees (County of Sonoma 2017). The County's Hazard Mitigation Plan is incorporated by reference into the Public Safety Element of the General Plan.

Sonoma County Emergency Operations Plan

The County's Emergency Operations Plan addresses the planned response to extraordinary emergency situations associated with large-scale disasters, and includes all cities, special districts, and unincorporated areas of the County. The plan aims to provide effective safety measures and reduce property loss and damage to the environment through management and coordination of emergency response operations, establishing priorities, and spreading information to the public.

Sonoma County General Plan

The County's General Plan includes goals and policies to reduce damage from wildfires, including:

Goal PS-3: Prevent unnecessary exposure of people and property to risks of damage or injury from wildland and structural fires.

Objective LU-7.1: Restrict development in areas that are constrained by the natural limitations of the land, including but not limited to fire hazards.

The General Plan notes that to reduce the risk of fire damage in rural areas, the types and intensities of land uses should be limited. Wildfire hazards may be reduced by mitigation measures such as the removal of vegetation and installation of dependable water systems, but the hazards cannot be eliminated entirely. Rural development should be most restricted where natural fire hazards are high, fire protection is limited, and inadequate road access prevents timely response by firefighting personnel and rapid evacuation by residents. As a result, the General Plan land use densities restrict land uses and density in hazardous areas, thereby limiting the number of people and buildings exposed to hazards.

Sonoma County Fire Prevention Division

The Sonoma County Fire Prevention Division is responsible for programs, procedures, and projects for preventing the outbreak of fires within the unincorporated areas of the county. The goal of this Division is to minimize the danger to persons and damage to property caused by fires that do occur. In addition to code enforcement, Fire Prevention Division staff are responsible for hazardous materials incident response, fire investigations, emergency scene management support at emergencies, and review of new development permit applications.

Sonoma County Department of Emergency Management

The Sonoma County Department of Emergency Management is responsible for the mitigation, preparedness, planning, coordination of response, and recovery activities related to county emergencies and disasters. The Department serves as the primary coordination point for emergency

management's activities affecting more than one jurisdiction, and the unincorporated areas of the county. The Department became an independent county department in July 2019.

4.19.3 Impact Analysis

a. Methodology and Significance Thresholds

Methodology

Impacts related to wildfire hazards and risks were evaluated using FHSZ mapping for Sonoma County, aerial imagery, and topographic mapping. Additionally, weather patterns related to prevailing winds and precipitation trends were evaluated as they relate to the spread and magnitude of wildfire. CEQA does not generally require an agency to consider the effects of existing environmental conditions on a proposed project's future users or residents. Consequently, impacts under the thresholds identified below would only be considered significant if the proposed project risks exacerbating those existing environmental conditions.

Significance Thresholds

For purposes of this EIR, the Project may have a significant adverse impact if the Project is in or near (within 2 miles of) SRAs or FHSZs and would do any of the following:

1. Substantially impair an adopted emergency response plan or emergency evacuation plan
2. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire
3. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment
4. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes

b. Project Impacts and Mitigation Measures

| |
|---|
| Threshold: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project substantially impair an adopted emergency response plan or emergency evacuation plan? |
|---|

Impact WFR-1 THE PROJECT IS WITHIN A SRA OR VERY HIGH FHSZs, BUT THE PROJECT WOULD NOT SUBSTANTIALLY IMPAIR AN ADOPTED EMERGENCY RESPONSE OR EVACUATION PLAN. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

As shown in Figure 4.19-1 and Figure 4.19-2, CAL FIRE has mapped the Project area in the SRA. The Project would result in the construction of a replacement bridge over the Russian River. Main transportation routes are identified in the County's Emergency Operations Plan (2014), including Highway 101, State Route 12, State Route 116, State Route 37, State Route 128, and State Route 1. The Bohemian Highway Bridge provides access to State Route 116 for residents south of the Project site. The existing bridge will remain open while construction of the new bridge occurs. The Project would not impair an emergency response or emergency evacuation plan and impacts would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

| | |
|-------------------|---|
| Threshold: | If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? |
| Threshold: | If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? |
| Threshold: | If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? |

Impact WFR-2 THE PROJECT SITE IS IN OR NEAR MODERATE, HIGH, AND VERY HIGH FHSZs. THE PROJECT WOULD NOT EXPOSE PROJECT OCCUPANTS AND STRUCTURES TO WILDFIRE RISKS FOR SITES LOCATED IN OR NEAR (WITHIN 2 MILES OF) SRAs OR VERY HIGH FHSZs. WILDFIRE RISK WOULD BE LESS THAN SIGNIFICANT.

As shown in Figure 4.19-1 and Figure 4.19-2, CAL FIRE has mapped as the Project within the SRA. The Project would result in the construction of a replacement bridge.

As indicated in section 4.18 *Utilities and Service Systems* utility power lines and associated infrastructure will have to be relocated to accommodate the new bridge alignment. This work is not expected to exacerbate fire risk because the work will meet current regulatory requirements for safety as well as Sonoma County General Plan policies to ensure fire suppression services are available at all times to meet the needs of Sonoma County residents. There will be no significant increase or expansion of use that would result in an exacerbation of fire risk or result in temporary or ongoing impacts to the environment beyond baseline.

The Project will not result in downslope or downstream flooding or landslides, as a result of runoff, post-fire instability, or drainage changes. The Project as designed will incorporate erosion control BMPs to stabilize exposed soils from construction activities. The bridge has been hydraulically designed and reviewed to not increase the risk of flooding.

Mitigation Measures

With implementation of **BIO-1** (General Mitigation Measures); **BIO-2** (Erosion and Sediment Control); **BIO-3** (Accidental Spill and Pollution Prevention); **BIO-4** (Riparian Habitat Replacement); **BIO-5** (Special-status Plant Mitigation) and **BIO-6** (Prevention of Invasive Species Spread)

Significance After Mitigation

Impacts would be less than significant with mitigation measures incorporated.

4.19.4 Cumulative Impacts

A project's environmental impacts are "cumulatively considerable" if the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the

effects of other current projects, and the effects of probable future projects” (*CEQA Guidelines* Section 15065[a][3]). The geographic scope for cumulative wildfire impacts is within 2 miles of the Project Area. This geographic scope is appropriate for wildfire because wildfires can cause impacts to large areas. Most of the unincorporated county is designated as an SRA. Within the geographic scope for this cumulative analysis, wildfire-related impacts could be significant if development is in rural or high fire hazard areas that could exacerbate wildfire risk or emergency evacuation. The construction of the bridge is occurring within the urban footprint of Monte Rio and will not facilitate future development further than the existing site conditions. Therefore the Project would not have a cumulatively considerable contribution to a significant cumulative impact regarding wildfires.

This page left blank intentionally.

Other CEQA Required Discussions Table of Contents

| | | |
|--------------|---|-----|
| 5 | Other CEQA Required Discussions | 5-1 |
| <u>5.1</u> | Cumulative Impacts | 5-1 |
| <u>5.2</u> | Growth-Inducing Impacts..... | 5-1 |
| <u>5.3</u> | Irreversible Environmental Effects..... | 5-2 |
| <u>5.3.1</u> | Significant and Unavoidable Impacts | 5-2 |

5 Other CEQA Required Discussions

This chapter includes the following discussions and analyses required by CEQA.

- Cumulative impacts.
- Growth-inducing impacts.
- Significant and unavoidable environmental impacts.
- Significant irreversible environmental impacts.
- Mitigation measures with the potential for environmental effects.

5.1 Cumulative Impacts

Per the State CEQA Guidelines cumulative impacts refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (State CEQA Guidelines § 15355).

For the purpose of this EIR, significant cumulative impacts would occur if impacts related to the implementation of the Project, combined with related environmental impacts resulting from implementation of the adopted County General Plan, build-out of land and installation of infrastructure consistent with the General Plan Land Use Map and Circulation Map, as well as maintenance and upgrades to existing infrastructure, would result in an adverse significant effect. For an impact to be considered cumulative, these incremental impacts and potential incremental impacts must be related to the types of impacts caused by the Project that have been evaluated in Chapter 4, *Impact Analysis*.

Each impact analyzed in chapter 4 of the Project EIR, consideration of cumulative impacts are included. Based on the analysis, the Project's contribution to a cumulative impact on the resources would not be considerable.

5.2 Growth-Inducing Impacts

Pursuant to Section 15126.2(d) of the CEQA Guidelines, an EIR must address whether a proposed project would directly or indirectly foster growth. This section analyzes whether the proposed Project would directly or indirectly induce economic, population, or housing growth in the surrounding area.

Transportation agencies play a role in land use changes by providing infrastructure that can improve mobility and/or open up access to new locations. New development generates travel to and from that location, and this additional travel creates demand for new transportation facilities.

The growth-inducing potential of a project would be significant if it were to foster growth or a concentration of population above what is assumed in local and regional land use plans. Significant growth-inducing impacts also could occur if a project were to provide infrastructure or service capacity to accommodate growth levels beyond those permitted by local or regional plans and policies.

The Project does not involve the expansion of existing urban service areas or extension of infrastructure outside of existing urban service areas; rather, it includes the replacement of an existing bridge over the Russian River to meet the objectives described in section 1. The proposed Project does not include construction of new housing that could directly induce population growth, nor does it include displacement of existing housing or people that would necessitate the construction of replacement housing elsewhere. No impacts to growth/population/housing are anticipated as there are no populations or proposed housing developments in the project vicinity nor are any anticipated in the near future. The Project analyzed and all alternatives considered would have no impact to growth inducing impacts. The Project is a highway improvement project that would not alter or increase the capacity or change the accessibility of Bohemian Highway. The proposed project would maintain the existing two-lane capacity and would have no growth-inducing impacts in the area.

5.3 Irreversible Environmental Effects

The State CEQA Guidelines Section 15126.2(d) requires the evaluation and discussion in certain EIRs of significant irreversible changes that would be caused by a proposed project. State CEQA Guidelines Section 15127 (Limitations on Discussions of Environmental Impact) of the State CEQA Guidelines states: The information required by Section 15126.2(d) concerning irreversible changes, need be included only in EIRs prepared in connection with any of the following activities:

- (a) The adoption, amendment, or enactment of a plan, policy, or ordinance of a public agency;
- (b) The adoption by a Local Agency Formation Commission (LAFCO) of a resolution making determinations; or
- (c) A project which will be subject to the requirement for preparing an environmental impact statement pursuant to the requirements of the National Environmental Policy Act of 1969, 42 U.S.C. 4321–4347.”

Implementation of the proposed Project would replace a narrow, fracture critical bridge to improve safety and movement for vehicles, pedestrians, and bicyclists across the Russian River in the community of Monte Rio. The Project does not include any of the activities listed in State CEQA Guidelines Section 15127 that would require the evaluation and discussion of significant irreversible environmental impacts. The Project is not a plan policy or ordinance, does not include LAFCO approvals, and does not require the preparation of and NEPA Environmental Impact Statement (EIS). No further evaluation or documentation is required.

5.3.1 Significant and Unavoidable Impacts

As summarized in Table ES-1, all impacts that would result from the proposed Project, excluding Cultural Resources, are either less than significant or less-than-significant with the implementation

of mitigation measures. Significant and unavoidable impacts to cultural resources are summarized below.

The Bohemian Highway Bridge over the Russian River (Bridge No. 20C-0018), is a Sonoma County Local Historic Landmark, and has a zoning designation of HD as part of the Sonoma County Historic Bridges Thematic District. For the Purposes of CEQA, projects “included in a local register of historical resources” are historical resources. (Pub. Resources Code § 21084.1.) The Bohemian Highway Bridge is a resource listed in "a local register of historical resources", and is therefore a historical resource under CEQA. Furthermore, “[a] project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.” (Id.)

Because the proposed project would remove and replace an existing bridge that is designated as historically significant by Sonoma County, a **significant unavoidable (SU)** impact to historical resources is projected as a result of the proposed project. (I.e., Cause a substantial adverse change in the significance of a historical resource, or a unique archaeological resource).

This page left blank intentionally.

Alternatives Table of Contents

| | | |
|-----|---|-----|
| 6 | Alternatives | 6-1 |
| 6.1 | Alternative 1: No-Project | 6-1 |
| | 6.1.1 Description | 6-1 |
| | 6.1.2 Impact Analysis | 6-2 |
| 6.2 | Alternatives Considered but Eliminated from Further Analysis | 6-6 |
| 6.3 | Alternative 2: Rehabilitation/Retrofit | 6-6 |
| | 6.3.1 Description | 6-6 |
| 6.4 | Alternative 3: Replace and Retain | 6-7 |
| | 6.4.1 Description | 6-7 |
| 6.5 | Alternative 4: Replace and Remove (Alignment Options) | 6-7 |
| | 6.5.1 Description | 6-7 |
| | 6.5.2 Replacement Alignments Considered but Eliminated from Further Discussion | 6-8 |
| 6.6 | Environmentally Superior Alternative | 6-9 |

Tables

| | | |
|-----------|---|------|
| Table 6-1 | Impact Comparison of Alternatives | 6-11 |
|-----------|---|------|

Figures

| | | |
|------------|-------------------------------------|-----|
| Figure 6.1 | Bridge Alignment Alternatives | 6-8 |
|------------|-------------------------------------|-----|

6 Alternatives

As required by *CEQA Guidelines* Section 15126.6, this chapter examines a range of reasonable alternatives to the proposed project that would attain most of the basic project objectives but would avoid or substantially lessen the significant adverse impacts.

As discussed in Section 2, *Project Description*, the project objectives are as follows:

1. To provide a bridge that meets current seismic design standards, as failure or collapse of the existing bridge from an earthquake would cause long-term disruption to travel, emergency response, evacuation, and the local economy.
2. To provide a bridge that meets current design standards for vehicular loading
3. To provide a bridge that does not overtop during a 100-year flood event
4. To provide a bridge that meets current standards for two-way vehicle traffic
5. To provide a bridge with sidewalks that meet current ADA standards
6. To provide a bridge that meets current design standards for bicycle lanes

This analysis presents four alternatives including the CEQA-required “no-project” alternative that involve changes to the project that may reduce the project-related environmental impacts identified in this Project EIR. Alternatives have been developed to provide a reasonable range of options to consider that would help decision makers and the public understand the general implications of revising or eliminating certain components of the proposed project.

The following alternatives are evaluated in this EIR:

1. Alternative 1: No Project
2. Alternative 2: Retrofit of the Existing Bridge
3. Alternative 3: Replace and Retain
4. Alternative 4: Replace and Remove
 - Five preliminary alignment options were analyzed under the replace and remove alternative.

Table 6-1 provides a summary comparison of the proposed Project and the No Project alternative considered. Detailed descriptions of the alternatives are included in the impact analysis for each alternative. The potential environmental impacts of each alternative are analyzed in Sections 6.1 through 6.3.

6.1 Alternative 1: No-Project

6.1.1 Description

The *CEQA Guidelines* (Section 15126.6[e][2]) require that the alternatives discussion include an analysis of a No Project alternative. Pursuant to CEQA, the No Project alternative refers to the analysis of existing conditions and what would reasonably be expected to occur in the foreseeable future if the project was not approved, based on current plans and consistent with available infrastructure and community services. The No Project alternative typically will proceed along one

of two lines: (1) when a project is a revision of an existing regulatory plan or policy, the No Project alternative will be continuation of the existing plan or policy; or (b) if a project is a development project on identifiable property, the No Project alternative is the circumstance under which the project does not proceed. In this case, the No Project alternative represents the continued use of the existing bridge, as it exists currently.

6.1.2 Impact Analysis

Aesthetics

Under the No-Project alternative, the existing bridge would remain in place and no changes would occur related to site aesthetics. There would be no construction-related removal of the existing bridge structure or vegetation or change in views from the roadway, residential uses, or from the Russian River. No new roadway or bridge structure would be introduced to the existing visual setting. The bridge is located within the Scenic Corridor boundaries of State Route 116. The No-Project alternative would not result in impacts on scenic vistas or resources because no new bridge or other improvements would be made. Impacts would be less than the proposed Project.

However, The Project is designed to not introduce contrasting elements to the existing landscape, and would improve the existing viewshed as the bridge would introduce more natural lines, as opposed to the more angular structure of the existing bridge. The architectural improvements associated with the proposed project may be viewed as an improvement over the baseline condition, and impact would be less than the proposed Project.

Agriculture and Forestry Resources

The No-Project alternative would not impact agricultural resources in the Project area. No designated important farmland, timberland, or forest land currently exist at the project site. Impacts would be similar to those under the proposed project.

Air Quality

The No-Project Alternative would result in no new impacts on air quality. Short-term construction emissions would not be generated and there would be no potential to exceed project-level thresholds for construction emissions. Sensitive receptors would not be exposed to constructed related emissions. Since the existing bridge would not be demolished, there would be no potential for exposure to structural asbestos, lead-based paint, or nuisance odors. Impacts would be less than the proposed Project.

Biological Resources

Under the No-Project Alternative, maintenance activities would potentially result in temporary disturbances to nesting migratory birds. However, no ground disturbance or loss of habitat would occur. Impacts would be less than the proposed Project.

Cultural Resources

The Bohemian Highway Bridge over the Russian River is designated as a local, Sonoma County Historic Landmark and has received Historical District (HD) zoning as part of the County's Historic Bridge Thematic District. Under the No-Project, the existing landmark structure would remain in place.

The potential for impacts on cultural resources would remain unchanged from existing conditions under the No-Project alternative. Ground disturbing construction activities would not occur and the location of the existing Bohemian Highway Bridge would remain the same. The potential to disturb or destroy buried archaeological resources or previously unknown human remains would remain unchanged. Further, operation and maintenance of the existing bridge and roads would not affect previously identified historical resources. Impacts would be less than the proposed Project.

Energy

The No-Project alternative would result in no new impacts to energy use. There would be no construction-related increase in fuel consumption. As with the proposed Project, there would be no change in demand for electric power or other energy sources and no inefficient or wasteful use of energy resources would occur. Impacts would be less than the proposed project.

Geology and Soils

Under the No-Project alternative, there would be no immediate impacts related to geologic hazards, such as those associated with fault rupture, strong ground shaking, and soil erosion, because the project would not be built. There would also be no potential for ground disturbance that could impact paleontological resources. Impacts would be less than the proposed Project.

However, the project site is subject to risks associated with potentially destructive earthquake activity. The existing structure is not built to current seismic standards and has been determined to be structurally deficient. Notwithstanding the ground-disturbing activities of the Project, an earthquake could impact the existing bridge, thereby exposing people and structures, including the risk of loss, injury, or death. The impact would be significant compared to the proposed Project.

Greenhouse Gas Emissions

The No-Project alternative would not result in increased GHG emissions compared to baseline conditions. Short-term construction emissions would not be generated and there would be no potential to exceed regional significance thresholds of CO₂e. Unlike the proposed Project, the No-Project alternative would not have the likely benefit to local air quality because the two-lane bridge eliminates the idling time that currently happens with the narrow lane bridge as vehicles wait to allow on-coming traffic to cross the bridge. There would be no change in traffic conditions and as a result, no potential benefit on operational GHG emissions. Impacts would be slightly greater than the proposed Project.

Hazards and Hazardous Materials

There would be no construction activity under the No-Project Alternative, which would preclude construction related use and potential accidental release of hazardous materials. As with to the proposed Project, The No-Project alternative would not introduce new fire hazards or risk to people and structures in the Project area. Impacts would be less than the proposed Project.

Hydrology and Water Quality

The No-Project alternative would result in no impacts to hydrology and water quality beyond the existing conditions. Construction impacts related to land disturbing activities would not occur and there would be no potential for temporary increases in sediment loads and pollutants to the Russian River, or degradation of water quality. There would be no increase in the use of chemicals or

pollutants associated with construction activities and as a result, no increase in potential hazardous materials in stormwater and no change in flow rates and drainage patterns of stormwater runoff.

Unlike the proposed Project, the no project alternative would not have the likely benefit of incorporation of Low Impact Development features such as storm water capture and treatment through the use of permanent BMPs and retainage basins at each bridge abutment. Additionally, unlike the proposed project, the existing bridge is complete overtopped during the 50 and 100 year storm events. Impacts would be greater than the proposed project.

Land Use and Planning

The No-Project alternative would result in no changes to land use in the Project area. Because a replacement bridge would not be constructed there would be no need for temporary or permanent right-of-way acquisition of private lands for transportation uses. Impacts would be less than the proposed Project.

Mineral Resources

The No-Project Alternative would not result changes the availability of a known mineral resource. Impacts would be similar to the proposed Project.

Noise

The No-Project alternative would result in no new noise or vibration related impacts. Short-term construction noise would not be generated and there would be no potential to exceed the County construction noise thresholds. There would likewise be no change traffic conditions, relative to existing conditions, and as a result, no impact on operational noise levels. Impacts would be less than the proposed Project.

Population and Housing

Similar to the proposed project, the No-Project alternative would have no impacts to population and housing and would not divide an established community. As with the proposed Project, The No-Project alternative would not induce population growth or displace people or housing. Impacts would be similar to the proposed Project.

Public Services and Recreation

The No-Project alternative would result in no immediate impacts on public services. The No-Project alternative would result in no impacts on beach recreation. Under the No-Project alternative recreational boating access would remain unchanged. Impacts would be less than the proposed Project.

Similar to the proposed project, there would be no associated change in demand for electricity or other energy sources and there would be no inefficient or wasteful use of energy resources.

However, the current substandard roadway approach and bridge conditions would remain and access for larger vehicles, including emergency responders and delivery trucks, would remain restricted. Over time the current structure would continue to deteriorate, and there is a higher potential for bridge failure during the 100 year flood event. Impacts would be greater than the proposed project.

Transportation

The No-Project Alternative would result in no construction-related impacts on traffic or circulation conditions in the study area. Because no improvements would be made to the bridge or roadway approaches, the route would remain substandard and structurally deficient. Access for larger vehicles, including emergency response vehicles and delivery trucks would remain restricted. Impacts would be greater than the proposed project.

Tribal Cultural Resources

The potential for impacts on tribal cultural resources would remain unchanged from existing conditions under the No-Project Alternative. Ground disturbing construction activities would not occur and the location of the existing Bohemian Highway Bridge would remain the same. The potential to disturb or destroy buried archaeological resources or previously unknown human remains would remain unchanged. Further, operation and maintenance of the existing bridge and roads would not affect previously identified historical resources. Impacts would be less than the proposed Project.

Utilities and Service Systems

Public services would not be affected under the No Project alternative. Utilities would not be affected under the No Project Alternative. No utility or communications infrastructure relocations would occur.

However, under the No Project alternative the bridge would continue to deteriorate and would be a higher potential of failure in the event of a sizable earth quake or flood. Impacts would be greater than the proposed project.

Wildfire

Similar to the proposed Project, The No-Project alternative would not change the risk of wildfire at the site or its vicinity. The No-Project alternative would retain the current functional and operational deficiencies and the existing bridge would retain its posted reduced load capacity. As the existing bridge ages, increased maintenance may be needed and the potential need for closures would increase. Overtime these issues may affect the use of the structure by fire suppression equipment and services. Impacts would be greater than the proposed project.

Cumulative Impacts

Based on the analysis herein, the No Project alternative would have less impacts to, air quality, biological resources, cultural resources, energy, hazards and hazardous materials, land use and planning, noise, public services and recreation, tribal cultural resources, and utilities and service systems than the proposed project. Impacts to agriculture and forestry resources, mineral resources, population and housing, and wildfire would be similar to the proposed project. Impacts to geology and soils, greenhouse gas, hydrology and water quality, and transportation would have greater impacts compared to the project. The No Project alternative would also not be cumulatively considerable.

6.2 Alternatives Considered but Eliminated from Further Analysis

The County considered numerous alternatives as suggested by commenters during public outreach and the CEQA scoping period. The following summarizes those alternatives considered, but ultimately rejected for inclusion in the EIR analysis as they would not meet a majority of the project objectives, did not substantially reduce impacts compared to the proposed project, or were determined to be infeasible.

6.3 Alternative 2: Rehabilitation/Retrofit

6.3.1 Description

This option would include the rehabilitation of the existing bridge to meet current seismic and minimum vehicular loading standards. The following items may be included in rehabilitation:

- Repaint all structural steel
- Replace bridge bearings
- Complete replacement of bridge substructure
- Replacement of rivets with high strength bolts
- Reinforcement of structural steel members
- Replacement of bridge deck with lightweight concrete or steel deck
- Replacement of exterior barrier rail with MASH compliant rail

The rehabilitation would upgrade the bridge, but only partially meet current design standards. Project objectives No. 3-6 listed above would not be met.

A primary goal of a rehabilitation project would be to preserve the character of the bridge, a designated County landmark. However, it is believed the extensive modifications required to successfully reinforce the bridge would severely alter the look and character of the existing bridge. A rehabilitation project is anticipated to have service life of 20 years before another major undertaking is required.

In two separate studies (one in 1997, one in 2013) it was found that retrofit or rehabilitation would cost more than replacement. Considerable review with the funding partners at Caltrans determined that the rehabilitation was not the financially prudent option, and a rehabilitation project would not qualify for federal funding.

Considering that rehabilitation would be more expensive, have a short service life, alter the character of the bridge, and meet few project objectives, Option 2 was rejected.

6.4 Alternative 3: Replace and Retain

6.4.1 Description

This option would include the construction of a separate vehicular bridge and retention of the existing bridge for pedestrian and bicycle use.

To retain the existing bridge, alternative 2 would have to be considered. Retention of the existing bridge for pedestrian and bicycle use would require retrofitting to ensure public safety. The seismic safety standards for vehicular and pedestrian bridges are the same, and therefore the rehabilitation of the existing bridge would be substantially similar to alternative 2. The character of the bridge would likely be impacted, reducing the benefit of retention. The permanent impact to the waterway would be greater than other options, as hydraulic issues in the area could worsen with two bridges impeding the waterway. Impacts associated with aesthetics, air quality, biology, cultural resources, GHG, noise, tribal cultural resources would all be similar or greater when compared to the proposed Project. Additionally, the cost of maintaining an additional bridge is greater. Caltrans/Federal Highway Administration does not provide funding for repair of pedestrian bridges and will not fund the rehabilitation of the pedestrian bridge or any future repairs.

While retaining the existing bridge for pedestrian and bicycle use would slightly reduce the cost of the new bridge because it would be modified to eliminate the sidewalks and bicycle lanes, the cost of a pedestrian bridge rehabilitation alone would be similar to the cost of a stand-alone rehabilitation. The overall cost of this alternative would be significantly more than other options, with a greater portion of the costs borne by the County.

Considering the costs, impacts to the character of the existing bridge, and impacts to the waterway, alternative 3 was rejected.

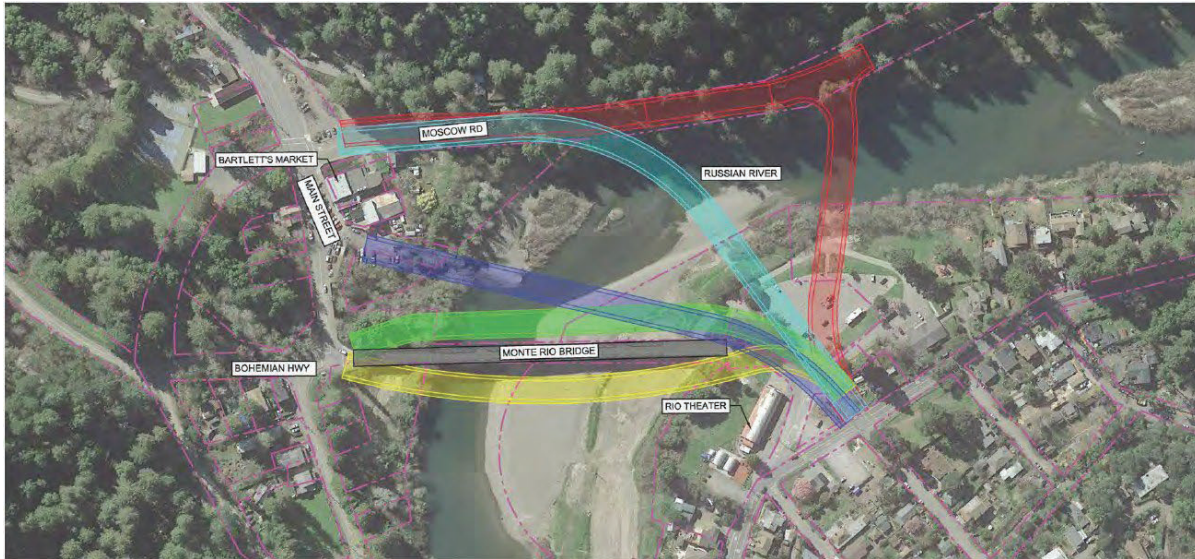
6.5 Alternative 4: Replace and Remove (Alignment Options)

6.5.1 Description

The Remove and Replace alternative is the Project. The alternative would remove all elements of the existing bridge except potentially the abutments, which may remain in place. The proposed project includes a steel network tied-arch bridge. The new bridge would meet all the stated project objectives. A replacement project is anticipated to have a minimum service life of 75 years.

A number of replacement bridge alignment options were considered as shown in Figure 6.1. Due to the location of the connecting roadways, all conceptual replacement alignments in the vicinity of the existing bridge involve the use the MRRPD properties.

Figure 6.1 Bridge Alignment Alternatives



The County held public community workshops to discuss the five alignment preferences, as well as aesthetic design, beach access, and other topics for the proposed bridge. At the first community meeting on September 28, 2017, the alignment alternatives were narrowed down to two (2) preferred alignments (the “dark blue” and “turquoise”) which were then presented for discussion and live polling at the second community meeting on January 10, 2019. The “dark blue” alignment was selected by 87% of workshop participants at the January 10, 2019 community meeting and is the current proposed alignment.

6.5.2 Replacement Alignments Considered but Eliminated from Further Discussion

As discussed above, five alternative alignments were considered for the proposed Replace and Remove alternative (Figure 6.1). Overall the “dark blue” (the Project) was the preferred community alignment, with the “turquoise” alignments identified as a secondary options. The engineering team and County staff analyzed the preferred alignment alternatives and determined that the “dark blue” and “turquoise” alignments, and agreed they were the most feasible options in terms of engineering and environmental constraints. When asked to choose between these two alignments, 87% of community workshop participants preferred the dark blue alignment, which was selected as the proposed project alignment.

All of the alignment alternatives would traverse Monte Rio Recreation and Park District (MRRPD) lands. Two of the alternative alignments (“red” and “turquoise”) could potentially have fewer impacts on MRRPD’s beach areas because they are further downstream from the existing bridge and connect to Moscow Road, rather than Main Street or Bohemian Highway. However, they both would have greater impacts to the Monte Rio fishing access area, and the red alignment would specifically impact the boat ramp, which was funded with Land and Water Conservation Fund Act (LWCFA) funds and would require approval from Department of the Interior before removal.

However, both the “red” and “turquoise” alignments were rejected due to engineering challenges, environmental constraints, higher costs, or because they do not meet the purpose and need of the project to service the needs of the community. Specifically, both the “red” and “turquoise” alignments by-pass main street stores, affect community cohesion, require additional intersections, increased cost to widen Moscow Road, difficult turning radius onto Moscow Road, and are too far for Monte Rio’s traditional 4th of July activities and other annual events, which are celebrated from the MRRPD beaches and properties. Community input received during the various workshops and outreach described above also influenced the decision to move forward with preferred Project alignment.

6.6 Environmentally Superior Alternative

CEQA requires identification of the environmentally superior alternative among the alternatives to the proposed Project. The environmentally superior alternative must be an alternative that reduces some of the project’s environmental impacts, regardless of the financial costs associated. Identification of the environmentally superior alternative is an informational procedure and the alternative identified as the environmentally superior alternative may not be that which best meets the objectives or needs of the proposed project. Table 6-1 indicates whether each alternative’s environmental impact is greater than, less than, or similar to that of the proposed project for each of the issue areas studied.

Based on the analysis of alternatives in this section, the No Project alternative is the environmentally superior alternative as it would either avoid or lessen the severity of the majority of impacts identified for the proposed Project. The No Project alternative would still result in greater impacts for geology and Soils, greenhouse gas, hydrology and water quality, and transportation. The existing bridge would be left in its current condition, and no structural or functional deficiencies would be corrected. Basic maintenance and repairs would continue. This option would have minimal impact on the community and natural resources, until such time that the bridge began to fail, or a seismic event occurred. This alternative would not include any of the improvements required to meet seismic, vehicular loading, hydraulic, or geometric and ADA objectives. Due to the potential for collapse during an earthquake, this option carries an unacceptable risk to life safety. This option would not improve vehicle, cyclist, or pedestrian access.

This alternative could expose people and property to risk of injury and may be considered a significant impact. In addition, since the current bridge is rated by Caltrans as Functionally Obsolete and designated as Scour Critical, at some point in the future, as the bridge continues to degrade or becomes a safety concern for motorists, the costs to maintain the bridge may become too great and presumably require closure of the bridge permanently.

Where the No Project alternative is determined to avoid or reduce more impacts than any other alternative, CEQA requires that the EIR identify an environmentally superior alternative among the other alternatives (*CEQA Guidelines* Section 15126.6[e]). It is expected the temporary impacts to the community and environment associated with construction of a replacement bridge would be comparable to the temporary impacts of a rehabilitation option, with negligible differences in permanent impacts. The alternative to replace and retain would essentially require a future rehabilitation of the old bridge to address public safety

concerns. While leaving the existing bridge in place may not have immediate impacts, based on the discussion above, adverse impacts would likely emerge overtime as its condition continues to deteriorate.

Removal of the existing bridge is expected to provide a number of environmental benefits. As part of the proposed replacement bridge project, the existing bridge piers will be removed from the river channel and beach areas, having an overall net-benefit to the river hydrology and flood flow water surface elevations. The replacement structure is a multimodal bridge to encourage safe pedestrian and bicycle use. Considering the cost, service life, project benefits and what would reasonably be expected to occur in the foreseeable future if the project was not approved, alternative 4 to Replace and Remove the existing structure is the preferred approach, and the environmentally superior Project alternative.

Table 6-1 Impact Comparison of Alternatives

| Issue | Proposed Project Impact Classification | Alternative 1: No Project | Alternative 2: Replace and Remove |
|------------------------------------|--|---------------------------|-----------------------------------|
| Aesthetics | LTSM | + - | - + |
| Agriculture and Forestry Resources | NI | = | = |
| Air Quality | LTSM | + | - |
| Biological Resources | LTSM | + | - |
| Cultural Resources | SU | + | - |
| Energy | LTS | + | - |
| Geology and Soils | LTSM | - | + |
| Greenhouse Gas Emissions | LTS | - | + |
| Hazards and Hazardous Materials | LTSM | + | - |
| Hydrology and Water Quality | LTSM | - | + |
| Land Use and Planning | LTS | + | - |
| Mineral Resources | NI | = | = |
| Noise | LTSM | + | - |
| Population and Housing | LTS | = | = |
| Public Services and Recreation | LTSM | + - | - + |
| Transportation | LTSM | - | + |
| Tribal Cultural Resources | LTSM | + | - |
| Utilities and Service Systems | LTSM | - | + |
| Wildfire | LTS | - | + |

NI = No Impact; LTS = Less than Significant; LTSM = Less than Significant with Mitigation; SU = Significant and Unavoidable
 + Superior to the proposed project (reduced level of impact)
 - Inferior to the proposed project (increased level of impact)
 = Similar level of impact to the proposed project

This page left blank intentionally.

References Table of Contents

- 7 References..... 7-1
 - 7.1 Bibliography 7-1
 - 7.2 List of Preparers..... 7-20

7 References

7.1 Bibliography

Aesthetics

- Bureau of Land Management (BLM). 1984. Manual 8400 – Visual Resource Management. Washington, DC. April 5, 1984.
- California Department of Transportation (Caltrans). 2019. List of eligible and officially designated State Scenic Highways. <https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways> (accessed January 2022).
- _____. 2021. Visual Impact Assessment Bohemian Highway Bridge over Russian River Replacement Project. Prepared by George Gorman, GPA Consulting. Santa Rosa, CA August 2021.
- Federal Highway Administration (FHWA). 2015. Guidelines for the Visual Impact Assessment of Highway Projects. Prepared by ICF International for the Federal Highway Administration. Washington, DC. January 2015.
- International Dark Sky Association. 2020. Light Pollution. [web page]. <https://www.darksky.org/light-pollution/> (accessed January 2022).
- Sonoma, County of. 2016. Sonoma County General Plan Open Space and Conservation Element. Santa Rosa, CA. Approved September 23, 2008, last updated August 9, 2016.
- _____. 2018. Sonoma County General Plan Land Use Element. Santa Rosa, CA. Approved September 23, 2008, last updated July 10, 2018.
- _____. 2019. Visual Assessment Guidelines. [web document]. Sonoma, CA. January 2019. <https://sonomacounty.ca.gov/PRMD/Regulations/Environmental-Review-Guidelines/Visual-Assessment-Guidelines/> (accessed March 2021).
- U.S. Forest Service (USFS). 1996. Handbook 701: Landscape Aesthetics, a handbook for scenery management. Washington, DC.

Agriculture and Forestry Resources

- California Department of Conservation (DOC). 2019. Farmland Mapping and Monitoring Program. <https://www.conservation.ca.gov/dlrp/fmmp> (accessed January 2022).
- Sonoma, County of . 2006. Sonoma County General Plan 2020 Draft Environmental Impact Report. Santa Rosa, CA. January 2006.
- _____. 2016. Sonoma County General Plan 2020: Agricultural Resources Element. Santa Rosa, CA. Originally published September 23, 2008. Last updated August 2, 2016.
- _____. 2018. Sonoma County General Plan 2020: Land Use Element. Santa Rosa, CA. Originally published September 23, 2008. Last updated July 10, 2018.
- _____. 2020. Farmland Mapping and Monitoring Program: Sonoma County. [GIS dataset]. Permit and Resource Management Department. Santa Rosa, CA. June 2020.

Sonoma County Agricultural Preservation and Open Space District. 2006. Connecting Communities: A Long-Range Acquisition Plan. Santa Rosa, CA. June 6, 2020.

Sonoma Local Agency Formation Commission (LAFCO). 2013. Policy: Agricultural Lands. [web page] <http://sonomalafco.org/Procedures-and-Guidelines/Policies-Procedures-and-Guidelines/Policy-Agricultural-Lands/> (accessed January 2022).

United States Department of Agriculture (USDA). 2020. Buffer Strips: Common Sense Conservation. https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/home/?cid=nrcs143_023568 (accessed October 2020).

Air Quality

Bay Area Air Quality Management District (BAAQMD). 2017a. Final 2017 Clean Air Plan. https://www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-_proposed-final-cap-vol-1-pdf.%20Accessed%20May%204 (accessed January 2022).

_____. 2017b. California Environmental Quality Act Air Quality Guidelines. May. https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en (accessed January 2022).

BREEZE Software. 2017. California Emissions Estimator Model User's Guide Version 2016.3.2. November 2017.

California Air Resources Board (CARB). 2009. Definitions of VOC and ROG. January. https://ww3.arb.ca.gov/ei/speciate/voc_rog_dfn_1_09.pdf (accessed January 2022).

_____. 2016. Ambient Air Quality Standards. Last modified: May 4, 2016. <http://www.arb.ca.gov/research/aags/aags2.pdf> (accessed January 2022).

_____. 2020a. Overview: Diesel Exhaust & Health. <https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health> (accessed January 2022).

_____. 2020b. iADAM Air Quality Data Statistics Top 4 Summary. <https://www.arb.ca.gov/adam/topfour/topfour1.php> (accessed January 2022).

California Climate Action Registry (CCAR) General Reporting Protocol. 2009. Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1.

Illingworth & Rodkin. 2021. Construction Air Pollutant and Greenhouse Gas Emissions Analysis. November 2021.

Biological Resources

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

_____. 2021a. *California Natural Diversity Database (CNDDDB) - Commercial Version dated December 30, 2018*. Accessed from 2018 to December 2021.

_____. 2021b. Biogeographic Information and Observation System. [database] www.wildlife.ca.gov/data/BIOS (accessed 2018 to December 2021).

- _____. 2021c. *Spotted Owl Observations and Spider Diagram [ds704] version updated June 29, 2020*. Retrieved December 1, 2021, from Biogeographic Information System: <https://www.wildlife.ca.gov/Data/BIOS>
- _____. 2021d. California Natural Community List. Dated August 18, 2021
- _____. 2021e. Special Animals List California Department of Fish and Wildlife October 2021. Sacramento California.
- California Department of Transportation. 2019. *Caltrans Bat Mitigation: A Guide to Developing Feasible and Effective Solutions*. Sacramento, CA.
- California Fish and Game Commission, 2020. Notice of Findings for Foothill Yellow-Legged Frog (*Rana Boylii*). March 10, 2020.
- California Native Plant Society, 2001. California Native Plant Society Botanical Survey Guidelines. December 9, 1983. Revised June 2, 2001.
- _____. 2020. *Inventory of Rare and Endangered Plants of California (online edition , v8-03 0.45)*. Accessed October 2020 through December 2021 from www.rareplants.cnps.org/
- Jepson Flora Project (eds.). (2019). *Jepson eFlora*. Accessed June 20, 2019 through December 2021, from Jepson Herbarium: http://ucjeps.berkeley.edu/jepson_flora_project.htm
- Gold Ridge Resource Conservation District. (2016). *District Watershed: Dutch Bill Creek*. Retrieved September 9, 2020, from <http://goldridgercd.org/html/w-dutch-bill-creek.htm>
- Google Earth. (2021). Google Earth v7.3.2. Imagery. Accessed from 2018 through December 2021.
- GPA Consulting, 2021a- Bohemian Highway Bridge over Russian River Replacement Natural Environment Study, prepared for Caltrans, March 2021.
- GPA Consulting, 2021b- Bohemian Highway Bridge over Russian River Replacement Biological Assessment, prepared for Caltrans, March 2021.
- National Marine Fisheries Service (NMFS). 1999. Designated Critical Habitat; Central California Coast and Southern Oregon/Northern California Coasts Coho Salmon. *Federal Register*, 24049-24062. Retrieved October 7, 2020, from NOAA Fisheries: <https://www.fisheries.noaa.gov/west-coast/endangered-species-conservation/central-california-coast-coho-salmon>
- _____. 2005. Endangered and Threatened Species; Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California. *Federal Register*, 70(170), 52488-52627. Retrieved from <https://www.federalregister.gov/documents/2005/09/02/05-16389/endangered-and-threatened-species-designation-of-critical-habitat-for-seven-evolutionarily>
- _____. 2008. *Biological Opinion for Water Supply, Flood Control Operations, and Channel*

Maintenance conducted by the USACE, the Sonoma County Water Agency, and the Mendocino County Russian River Flood Control and Water Conservation Improvement District. Retrieved December 4, 2020, from <https://www.sonomawater.org/biological-opinion>

_____. 2016a. *California Species List Tool*. Retrieved October 14, 2020, from NOAA Fisheries | West Coast Region: https://www.westcoast.fisheries.noaa.gov/maps_data/california_species_list_tools.html

_____. 2016b. *2016 5-Year Review: Summary & Evaluation of Central California Coast Steelhead*. Santa Rosa, CA: National Marine Fisheries Service West Coast Region. Retrieved October 7, 2020, from <https://repository.library.noaa.gov/view/noaa/17017>

_____. 2018. *Essential Fish Habitat Mapper*. Retrieved July 5, 2019, from NOAA Habitat Conservation/Habitat Protection: <https://www.habitat.noaa.gov/protection/efh/efhmapper/>

National Oceanic and Atmospheric Administration. 2019. *Climate Data Online*. Retrieved July 19, 2019, from National Centers for Environmental Information:

Natural Resources Conservation Services. (2019). *Custom Soil Source Report for Sonoma County, California*. United States Department of Agriculture. Retrieved July 19, 2019, from Web Soil Survey: <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

Pacific Energy Center. (2006). *The Pacific Energy Center's Guide to: California Climate Zones and Bioclimatic Design*. California Energy Commission. Retrieved April 8, 2020, from https://www.pge.com/includes/docs/pdfs/about/edusafety/training/pec/toolbox/arch/climate/california_climate_zones_01-16.pdf

Spencer, W.D., P. Beier, K. Penrod, K. Winters, C. Paulman, H. Rustigian-Romsos, J. Strittholt, M. Parisi, and A. Pettler. 2010. *California Essential Habitat Connectivity Project: A Strategy for Preserving Connected California*. For the California Department of Transportation and California Department of Fish and Game. Sacramento, CA. February 2010.

Sonoma Water. (2019). *Water Supply: Russian River System*. Retrieved August 6, 2019, from Sonoma Water: <https://www.sonomawater.org/water-supply>

U.S. Fish and Wildlife Services. (2019a). *National Wetlands Inventory*. Retrieved July 19, 2019, from Wetlands Mapper: <https://www.fws.gov/wetlands/data/Mapper.html>

_____. (2021). *Information for Planning and Consultation*. Sacramento, CA: U.S. Fish and Wildlife Service. Accessed November 12, 2021 between March 1, 2018 and November 2021 from Environmental Conservation Online System: <https://ecos.fws.gov/ipac/location/index>

_____. U.S. Fish and Wildlife Service, 2000. *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants*. January 2020.

- U.S. Geological Survey. (2018). *Locate Your Watershed*. Retrieved April 23, 2018, from Science in Your Watershed: https://water.usgs.gov/wsc/watershed_finder.html
- U.S. Environmental Protection Agency. (2017). WATERS (Watershed Assessment, Tracking & Environmental Results System). Retrieved July 10, 2019, from <https://www.epa.gov/waterdata/viewing-waters-data-using-google-earth>
- U.S. Fish and Wildlife Services. (2019b). *National Wetlands Inventory*. Retrieved July 19, 2019, from Wetlands Mapper: <https://www.fws.gov/wetlands/data/Mapper.html>
- Spencer, W.D., P Beir, K. Penrod, K. Winters, C. Paulman, H. Rustigian-Romsos, J.Strittholt, M. Parisi, and A. Pettler. 2010. California Essential Habitat Connectivity Project. A Strategy for Conserving a connected California. Prepared for California Department of Transportation, California Department of Fish and Game, and Federal Highways Administration.
- Williams, P., Thorp, R.W., Richardson, L., & Colla, S. 2014. Bumble Bees of North America, an identification guide. Princeton University Press.
- California Department of Fish and Wildlife. (2020c). *Coho Salmon*. Retrieved October 7, 2020, from California Department of Fish and Wildlife | Conservation: <https://wildlife.ca.gov/Conservation/Fishes/Coho-Salmon>
- Sonoma Water and California Sea Grant. (2019). *Implementation of California Coastal Salmonid Population Monitoring in the Russian River Watershed (2015 - 2019)*. Santa Rosa, CA. Retrieved from <https://www.sonomawater.org/cmp>
- Chinook - The rearing and spawning habitat in the lower Russian River watershed (from Cloverdale downstream to Monte Rio) exceeds the thermal tolerances for spawning and rearing salmonids (National Marine Fisheries Service, 2008)
- National Marine Fisheries Service. (1999). Designated Critical Habitat; Central California Coast and Southern Oregon/Northern California Coasts Coho Salmon. *Federal Register*, 24049-24062. Retrieved October 7, 2020, from NOAA Fisheries: <https://www.fisheries.noaa.gov/west-coast/endangered-species/conservation/centralcalifornia-coast-coho-salmon>
- National Marine Fisheries Service. (2001). Guidelines for Salmonid Passage at Stream Crossings. National Marine Fisheries Service Southwest Region. September 2001.
- Sonoma, County of. 2010. 2010 Sonoma County Bicycle and Pedestrian Plan.
- Sonoma, County of. 2008. General Plan 2020. <https://sonomacounty.ca.gov/PRMD/Long-Range-Plans/General-Plan/> (accessed December 2021).United States Fish and Wildlife Service (USFWS). 1973. The Endangered Species Act of 1973, as amended (16 U.S.C 1531 et seq.).
- United States Geological Survey (USGS). 2020. National Hydrography Dataset. <https://nhd.usgs.gov/> (accessed July 2020).

United States Geological Survey. (2020) StreamStats. <https://streamstats.usgs.gov/ss>

(Accessed November 2020)

Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (United States Army Corps of Engineers, 2010)

Corps of Engineers Wetlands Delineation Manual (United States Army Corps of Engineers, 1987).

A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States (United States Army Corps of Engineers, 2014).

Cultural Resources

Bean, Walton. 1968. California An Interpretive History. New York City, NY: McGraw-Hill.

California Missions Resource Center. 2016. San Rafael Arcángel. 2019.

<https://missionscalifornia.com/san-rafael-arcangel-mission> (accessed February 2020).

California Office of Historic Preservation. 1995. Instructions for Recording Historical Resources. Available at <http://scic.org/docs/OHP/manual95.pdf> (accessed January 2020).

D'Oro, Stella. 2009. Native Californian prehistory and climate in the San Francisco Bay Area. Master's Theses. 3653. DOI: I: <https://doi.org/10.31979/etd.645p-hkrf> (accessed February 2020).

Guinn, J.M. 1976. Gold! Gold! Gold! From San Francisquito! In Los Angeles: Biography of a City, edited by John Caughey and Laree Caughey. Los Angeles, CA: University of California Press.

Hylkema, M.G. 2002. Tidal Marsh, Oak Woodlands, and Cultural Florescence in Southern San Francisco Bay Area Region. In Catalysts to Complexity: Late Holocene Societies of California Coast, edited by J.M. Erlandson and T.L. Jones, pp. 233-262. Los Angeles, CA: Costen Institute of Archaeology.

Jones, Terry L. and Kathryn A. Klar (editors). 2007. California Prehistory: Colonization, Culture, and Complexity. New York City, NY: Rowman & Littlefield Publisher, Inc.

Kachour, Jenna and Lyons, A.M. 2022. Historical Resources Evaluation Report for the Bohemian Highway Bridge over Russian River Replacement Project Monte Rio Sonoma County. GPA Consulting Los Angeles, CA.

Lightfoot, K.G. and E.M. Luby. 2002. Late Holocene in the San Francisco Bay Area: Temporal Trends in the Use and Abandonment of Shell Mounds in the East Bay. In Catalysts to Complexity: Late Holocene Societies of the California Coast, edited by J.M. Erlandson and T.L. Jones, pp. 263-281. Los Angeles, CA: Costen Institute of Archaeology.

Livingston, D.S. 1993. Ranching on the Point Reyes Peninsula - A History of the Dairy and Beef Ranches within Point Reyes National Seashore, 1834-1992. Point Reyes National Seashore. Marin County, California, USA.

https://www.nps.gov/parkhistory/online_books/pore/ranching.pdf (accessed February 2020)

- _____. 1995. *A Good Life: Dairy Farming in the Olema Valley - A History of the Dairy and Beef Ranches of the Olema Valley and Lagunitas Canyon*. Golden Gate National Recreation Area and Point Reyes National Seashore. Marin County, California, USA.
https://www.nps.gov/parkhistory/online_books/pore/dairy_farming.pdf (accessed February 2020)
- Milliken, R., Fitzgerald, R.T., Hylkema, M.G., Groza, R., Origer T., Bieling, D.G., Leventhal, A., Wiberg, R.S., Gottsfield, A., Gillette, D., Viviana, B., Strother, E., Cartier, R., Fredrickson, D.A..2007. *California Prehistory: Colonization, Culture, and Complexity*. Lanham, MD: AltaMira Press.
- Moratto, Michael J. 1984. *California Archaeology*. Orlando, Florida.
- National Park Service. 1983. *Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines*. Electronic document, online at
http://www.nps.gov/history/local-law-Arch_Standards.htm (accessed December 2011).
- _____. 1995. *National Register Bulletin: How to Apply the National Register Criteria for Evaluation*.
https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf (accessed February 2020).
- Netronline. var. "Historic Aerials." [digital photograph database]. Images of the Project Area viewed online. <https://www.historicaerials.com/viewer> (accessed May 2020).
- Ragir, Sonia. 1972. *The Early Horizon in Central California Prehistory*. Berkeley, CA: Contributions to University of California Archaeological Research Facility No. 15.
- Rolle, Andrew. 2003. *California A History*. Sixth Edition. Wheeling, Illinois: Harlan Davidson, Inc.
- Shumway, Burgess McK. 2007. *Patented Private Land Grants Listed by County*. Second Edition. San Bernadino, CA: Borgo Press.
- Siskin, Barb, Caretti, G. ,and McWaters, J. 2021. *Archaeological Survey Report for the Bohemian Highway Bridge (20C0018), Replacement Project in Monte Rio, Sonoma County, California*. Far Western Anthropological Research Group, Inc.
- Sonoma County. 2020. *Criteria for Designation of Historic Landmarks*.
<https://sonomacounty.ca.gov/PRMD/Planning/Historic-Resources/Criteria-for-Designation-of-Historic-Landmarks/> (accessed May 2020).
- Workman, Boyle. 1936. *The City that Grew: As Told to Caroline Walker*. Los Angeles, CA: The Southland Publishing Co.

Energy

- California Air Resources Board (CARB). 2020. *California's Greenhouse Gas Vehicle Emission Standards under Assembly Bill 1493 of 2002 (Pavley)*. <https://ww2.arb.ca.gov/californias-greenhouse-gas-vehicle-emission-standards-under-assembly-bill-1493-2002-pavley> (accessed January 2022).
- California Department of Conservation, Division of Oil, Gas and Geothermal Resources. 2020. *Division of Oil, Gas & Geothermal Resources – Well Finder*.
<https://maps.conservation.ca.gov/doggr/wellfinder/#close> (accessed January 2022).

- California Department of Finance (DOF). 2019. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2019 with 2010 Census Benchmark. <http://www.dof.ca.gov/Forecasting/Demographics/Estimates/e-5/> (accessed January 2022).
- California Energy Commission (CEC). 2018a. Gas Consumption by County. <http://www.ecdms.energy.ca.gov/gasbycounty.aspx> (accessed January 2022).
- _____. 2018b. Electricity Consumption by County. <http://www.ecdms.energy.ca.gov/elecbycounty.aspx> (accessed January 2022).
- _____. 2018c. California Retail Fuel Outlet Annual Reporting (CEC-A15) Results. https://ww2.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html (accessed January 2022).
- _____. 2018d. 2018 Total System Electric Generation. <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2019-total-system-electric-generation/2018> (accessed January 2022).
- California Fuel Cell Partnership. 2020. H2 Station List. https://cafcp.org/sites/default/files/h2_station_list.pdf (accessed January 2022).
- Drive Biodiesel. 2020. California Biodiesel Locations. <http://www.drivebiodiesel.net/State/CaliforniaBiodiesel.html> (accessed April 2020).
- Schremp, Gordon. 2017. Senior Fuels Specialist, California Energy Commission. Personal communication via phone and email regarding fuel consumption in California by County and by source with Lance Park, Associate Planner, Rincon Consultants, Inc. August 22, 2017.
- Sonoma Clean Power (SCP). 2020. Power Sources. <https://sonomacleanpower.org/power-sources> (accessed January 2022).
- Sonoma, County of. 2020. Sonoma County's Electric Vehicle Trail. <https://www.sonomacounty.com/articles/sonoma-countys-electric-vehicle-trail> (accessed January 2022).
- U.S. Energy Information Administration (EIA). 2017a. California State Profile and Energy Estimates. <https://www.eia.gov/state/?sid=CA#tabs-3> (accessed January 2022).
- _____. 2017b. Table C13. Energy Consumption Estimates per Capita by End-Use Sector, Ranked by State, 2017. https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_sum/html/rank_use_capita.html&sid=US (accessed January 2022).
- _____. 2017c. California Energy Consumption Estimates, 2017. <https://www.eia.gov/state/?sid=CA#tabs-2> (accessed January 2022).
- _____. 2017d. Table C8. Transportation Sector Energy Consumption Estimates, 2017 (Trillion Btu). https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_sum/html/sum_btu_tra.html (accessed January 2022).
- _____. 2019a. U.S. energy facts explained. August 2019. <https://www.eia.gov/energyexplained/us-energy-facts/> (accessed January 2022).
- _____. 2020. Profile Data. Updated March 19, 2020. <https://www.eia.gov/state/data.php?sid=CA#ConsumptionExpenditures> (accessed January 2022).

Geology and Soils

- Biggs Cadosa Associates, Inc. 2020. Structure Type Selection Report for Monte Rio Bridge Replacement. San Jose, CA.
- Blake, M.C., Graymer, R.W., Jones, D.L., and Soule, Adam. 2000. Geologic map and map database of parts of Marin, San Francisco, Alameda, Contra Costa, and Sonoma Counties, California: U.S. Geological Survey, Miscellaneous Field Studies Map MF-2337, scale 1:75,000.
- Blake, M.C., Graymer, R.W., and Stamski, R.E. 2002. Geologic map and map database of western Sonoma, northernmost Marin, and southernmost Mendocino Counties, California: U.S. Geological Survey, Miscellaneous Field Studies Map MF 2402, scale 1:100,000.
- California Geological Survey (CGS). 2002. California Geomorphic Provinces, Note 36.
- Jefferson, G.T. 2010. A catalogue of late Quaternary vertebrates from California. Natural History Museum of Los Angeles County Technical Report 7, p. 5-172.
- Norris, R.M., and R.W. Webb. 1990. Geology of California. John Wiley and Sons, Inc. New York.
- Paleobiology Database. 2020. Online fossil locality database. <https://www.paleobiodb.org/#/>.
- Society of Vertebrate Paleontology. 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Society of Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee.
- Sonoma County. 2006. Sonoma County General Plan 2020 General Plan Update Draft Environmental Impact Report. Permit and Resource Management Department. State Clearinghouse No. 2003012020. January 2006.
- _____. 2014. Public Safety Element of the General Plan. Adopted September 9, 2014. <https://sonomacounty.ca.gov/PRMD/Long-Range-Plans/General-Plan/Public-Safety/> (accessed June 2020).
- _____. 2016. Erosion Prevention & Sediment Control Notes. <https://sonomacounty.ca.gov/PRMD/Eng-and-Constr/Grading-and-Storm-Water/Erosion-Prevention-and-Sediment-Control/> (accessed June 2020).
- University of California Museum of Paleontology (UCMP). 2020. UCMP online database specimen search portal. <http://ucmpdb.berkeley.edu/> (accessed June 2020).
- Wagner, D.L., and Bortugno, E.J. 1982. Geologic map of the Santa Rosa quadrangle, California. California Division of Mines and Geology, Regional Geologic Map 2A, scale 1:250,000.
- Woodring, W. P., M. N. Bramlette, and Kew, W.S.W. 1946. Geology and Paleontology of Palos Verdes Hills, California, United States Department of the Interior, Geology Survey, Professional Paper 207. <https://pubs.er.usgs.gov/publication/pp207> (accessed June 2020).

Greenhouse Gas Emissions

- Association of Bay Area Governments (ABAG). 2017. Plan Bay Area 2040, Final. Adopted July 26. <http://files.mtc.ca.gov/library/pub/30060.pdf> (accessed January 2022).
- BREEZE Software. 2017. California Emissions Estimator Model User's Guide Version 2016.3.2. November 2017.

- California Air Resources Board (CARB). 2011. Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Public Hearing to Consider the “LEV III” Amendments to the California Greenhouse Gas and Criteria Pollutant Exhaust and Evaporative Emission Standards and Test Procedures and to the On-Board Diagnostic System Requirements for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, and to the Evaporative Emission Requirements for Heavy-Duty Vehicles. December 7, 2011.
<http://www.arb.ca.gov/regact/2012/leviiiighg2012/levisor.pdf> (accessed July 2020).
- _____. 2017. California’s 2017 Climate Change Scoping Plan. December 14, 2017.
https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf (accessed May 2020).
- _____. 2019. California Greenhouse Gas Emissions for 2000 to 2017, Trends of Emissions and Other indicators.
https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf (accessed July 2020).
- _____. 2020a. Announcement: EMFAC Off-Model Adjustment Factors for Carbon Dioxide (CO₂) Emissions to Account for the SAFE Vehicles Rule Part One and the Final SAFE Rule. June 26.
https://ww3.arb.ca.gov/msei/announcement_emfac_off_model%20adjustment-6262020-final.pdf (accessed July 2020).
- _____. 2020b. EMFAC Off-Model Adjustment Factors for Carbon Dioxide (CO₂) Emissions to Account for the SAFE Vehicles Rule Part One and the Final SAFE Rule. June 26.
https://ww3.arb.ca.gov/msei/emfac_off_model_co2_adjustment_factors_06262020-final.pdf (accessed July 2020).
- California Climate Change Center. 2006. Climate Scenarios for California.
- California Department of Food and Agriculture. 2018. “California Agricultural Production Statistics.” Last modified: August 30, 2018. <https://www.cdfa.ca.gov/statistics/> (accessed January 2022).
- California Department of Water Resources. 2008. Managing an Uncertain Future: Climate Change Adaption Strategies for California’s Water. October 2008.
- California Natural Resources Agency. 2009. 2009 California Climate Adaptation Strategy. March 2009. http://resources.ca.gov/docs/climate/Statewide_Adaptation_Strategy.pdf (accessed January 2022).
- Illingworth & Rodkin. 2021. Construction Air Pollutant and Greenhouse Gas Emissions Analysis. Bohemian Highway Bridge (BHB) Replacement Project - Bridge No. 20C0018. Cotati, CA. November 2021.
- Intergovernmental Panel on Climate Change (IPCC). 2007. Summary for Policymakers. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.
- _____. 2014. Climate Change 2014: Mitigation of Climate Change. Summary for Policymakers - Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

- _____. 2018. Summary for Policymakers. In: Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. <https://www.ipcc.ch/sr15/> (accessed July 2020).
- Northern Sonoma County Air Pollution Control District (NSCAPCD). 2020. Planning & Sustainability. <https://www.nosocoair.net/planning.html> (accessed July 2020).
- Parmesan, C. August 2006. Ecological and Evolutionary Responses to Recent Climate Change.
- Regional Climate Protection Authority. 2020. Sonoma County Green House Gas Inventory, 2018 Update. July.
- State of California. 2018. California's Fourth Climate Change Assessment San Francisco Bay Area Region Report.
- _____. 2019. California's Fourth Climate Change Assessment Statewide Summary Report. January 16. <http://www.climateassessment.ca.gov/state/> (accessed July 2020).
- County of Sonoma. 2018. Climate Change Action Resolution. May 8. <https://sonomacounty.ca.gov/PRMD/Long-Range-Plans/Climate-Change-Action-Resolution/> (accessed January 2022).
- United States Environmental Protection Agency (U.S. EPA). 2019. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2017. U. S. EPA #430-R-19-001. April.
- World Meteorological Organization (WMO). 2013. A summary of current and climate change findings and figures: a WMO information note. March 2013. https://library.wmo.int/opac/index.php?lvl=notice_display&id=15892#.Wt9-Z8gvzIU (accessed January 2022).

Hazards and Hazardous Materials

- California Office of Emergency Services (CalOES). 2017. *State of California Emergency Plan*. October 1, 2017. https://www.caloes.ca.gov/PlanningPreparednessSite/Documents/California_State_Emergency_Plan_2017.pdf (accessed December 2021).
- _____. 2018. *Cal OES Fire and Rescue Division Regional Mutual Aid Coordinators*. Available at: <http://www.caloes.ca.gov/FireRescueSite/Documents/Cal%20OES%20Region%20Coordinator%20Map.pdf> (accessed December 2021).
- _____. 2020. Standardized Emergency Management System. <https://www.caloes.ca.gov/cal-oes-divisions/planning-preparedness/standardized-emergency-management-system> (accessed December 2021).
- Department of Toxic Substances Control (DTSC). 2020. EnviroStor database results. <http://envirostor.dtsc.ca.gov/> (accessed December 2021).

Parikh Consultants, Inc. 2021. Phase 1 Initial Site Assessment Proposed Monte Rio Bridge Replacement, Sonoma County California.

Sonoma County. 2006. Sonoma County General Plan 2020 General Plan Update Draft Environmental Impact Report. Permit and Resource Management Department. State Clearinghouse No. 2003012020. January 2006.

_____. 2014. Public Safety Element of the General Plan. Adopted September 9, 2014.
<https://sonomacounty.ca.gov/PRMD/Long-Range-Plans/General-Plan/Public-Safety/>
(accessed December 2021).

_____. 2017. Sonoma County Operational Area Hazard Mitigation Plan. September 2017.

State Water Resources Control Board (SWRCB). 2020. GeoTracker database results.
<https://geotracker.waterboards.ca.gov/> (accessed December 2021).

Town of Windsor. 2015. *Town of Windsor 2040 General Plan Background Report Public Review Draft*. April 2015. Prepared by Mintier Harnish.

Hydrology and Water Quality

Biggs Cadosa Associates, Inc. 2020. Structure Type Selection Report for Monte Rio Bridge Replacement. San Jose, CA.

California American Water (Cal-Am). 2016. Worksheet 1 Sacramento.
<https://amwater.com/caaw/water-quality> (accessed December 2021).

California Department of Conservation (DOC). 2020. Sonoma County Tsunami Inundation Maps.
<https://www.conservation.ca.gov/cgs/tsunami/maps/sonoma> (accessed December 2021).

California Department of Water Resources (DWR). 2004a. Lower Russian River Valley Groundwater Basin. February 27, 2004. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/1_060_LowerRussianRiverValley.pdf (accessed December 2021).

_____. 2020. Basin Prioritization. Statewide Map of Current SGMA Basin Prioritization. May 1, 2020
<https://water.ca.gov/Programs/Groundwater-Management/Basin-Prioritization> (accessed December 2021).

North Coast Regional Water Quality Control Board (RWQCB). 2018. Water Quality Control Plan for the North Coast Region. June 2018.
https://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/190204/Final%20Basin%20Plan_20180620_lmb.pdf (accessed December 2021).

_____. 2020. Russian River TMDLs. Updated January 15, 2020.
https://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/russian_river/
(accessed December 2021).

Ochoa, Analette. 2021. Water Quality Assessment Report Monte Rio Bridge Replacement Project. WRECO. Sonoma County, California.

PARIKH. 2020. Preliminary Foundation Design Information (Foundation Type Selection)
Monte Rio Bridge Replacement Project, Sonoma County, California

San Francisco Bay RWQCB. 2017.
https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/planningtmdls/basinplan/web/docs/BP_all_chapters.pdf (accessed December 2021).

- Santa Rosa, City of. 2017. Storm Water Low Impact Development Technical Design Manual. <https://srcity.org/DocumentCenter/View/14974/2017-Storm-Water-Technical-Design-Manual-Narrative> (accessed October 2020).
- Santa Rosa Plain Groundwater Sustainability Agency. 2020. Groundwater Sustainability Plan draft. <https://santarosaplainingroundwater.org/gsp/> (accessed December 2021).
- Sonoma, County of, City of Santa Rosa, Russian River Watershed Association. 2005. Guidelines for the Standard Urban Storm Water Mitigation Plan. Jun 3, 2005. <https://srcity.org/DocumentCenter/View/14558/SUSMP-2005-Manual> (accessed December 2021).
- Sonoma, County of. 2008. General Plan 2020. <https://sonomacounty.ca.gov/PRMD/Long-Range-Plans/General-Plan/> (accessed December 2021).
- _____. 2017. 2016 Hazard Mitigation Plan Update. April 2017. <https://sonomacounty.ca.gov/PRMD/Long-Range-Plans/Hazard-Mitigation/Approved-Update/> (accessed December 2021)
- _____. 2020. National Pollutant Discharge Elimination System (NPDES) Information. <https://sonomacounty.ca.gov/PRMD/Eng-and-Constr/Grading-and-Storm-Water/NPDES-Information/> (accessed December 2021).
- Sonoma County Water Agency (SWCA). 2016. 2015 Urban Water Management Plan. June 2016. <https://evogov.s3.amazonaws.com/media/185/media/164720.PDF> (accessed June 2020).
- Sonoma Valley County Sanitation District. 2013. Sonoma Valley Salt and Nutrient Management Plan Final Report. September 2013. <https://evogov.s3.amazonaws.com/185/media/182076.pdf> (accessed December 2021).
- State Water Resources Control Board (SWRCB). 2016. Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report). https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml (accessed December 2021).
- Sweetwater Springs Water District (SSWD). 2016. 2015 Urban Water Management Plan. October 2016. https://wuedata.water.ca.gov/public/uwmp_attachments/3037381827/Urban%20Water%20Mgmt%20Plan%20-%202015%20FinalR.pdf (accessed December 2021).
- United States Climate Data. 2020. Climate Sonoma – California and Weather Averages Sonoma. <https://www.usclimatedata.com/climate/sonoma/california/united-states/usca1076> (accessed May 2020).
- United States Environmental Protection Agency (USEPA). 2020. WATERS GeoViewer. <https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=ada349b90c26496ea52aab66a092593b> (accessed December 2021).
- United States Geological Survey (USGS). 2020. National Water Information System: Groundwater levels for California. <https://nwis.waterdata.usgs.gov/ca/nwis/gwlevels> (accessed December 2021)

Land Use and Planning

Association of Bay Area Governments (ABAG). 2022. Plan Bay Area 2050. Adopted October 21, 2021. <https://www.planbayarea.org/finalplan2050> (accessed January 2022).

Governor's Office of Planning and Research. 2015. The Governor's Environmental Goals and Policy report. November 2015. http://opr.ca.gov/docs/EGPR_Nov_2015.pdf (accessed January 2022).

Permit Sonoma. 2021. General Plan Consistency Determination. County of Sonoma.

Mineral Resources

California Geological Survey (CGS). 2013. Update of Mineral Land Classification: Aggregate Materials in the North San Francisco Bay Production-Consumption Region, Sonoma, Napa, Marin, and Southwestern Solano Counties, California. Special Report 205.

Sonoma, County of. 2006. Sonoma County General Plan 2020 Draft Environmental Impact Report. Santa Rosa, CA. January 2006.

_____. 2020a. Plan Selection. <https://sonomacounty.ca.gov/PRMD/Long-Range-Plans/Aggregate-Resource-Management/Plan-Selection/> (accessed January 2022).

_____. 2020b. Goals and Objectives. <https://sonomacounty.ca.gov/PRMD/Long-Range-Plans/Aggregate-Resource-Management/Goals-and-Objectives/> (accessed January 2022).

Noise

AMBIENT Air Quality and Noise Consulting. 2021. *Construction Noise & Groundborne Vibration Technical Memorandum – Bohemian Highway Bridge Over Russian River Replacement Project, Sonoma County, Federal Project No. STPLZ-5920(135)*. July.

California Department of Transportation (Caltrans). 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*. (CT-HWANP-RT-13-069.25.2) September. http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf (accessed January 2022).

_____. 2020. *Transportation and Construction Vibration Guidance Manual*. (CT-HWANP-RT-20-365.01.01) April. <https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf> (accessed July 2020).

County of Sonoma. 2019. Guidelines for the Preparation of Noise Analysis. Version 2. February.

Federal Highway Administration (FHWA). 2017. *Highway Traffic Noise Analysis and Abatement Policy and Guidance*. https://www.fhwa.dot.gov/Environment/noise/regulations_and_guidance/polguide/polguide04.cfm (accessed January 2022).

Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment*. November. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf (accessed January 2022).

Lawrence E. Kinsler and R. Frey, Austin and B. Coppers, Alan and V. Sanders, James. *Fundamentals of Acoustics*, 4th Edition. ISBN 0-471-84789-5. Wiley-VCH, December 1999.

Malcolm J. Crocker (Editor). 2007. *Handbook of Noise and Vibration Control Book*, ISBN: 978-0-471-39599-7, Wiley-VCH, October.

Sonoma-Marin Area Rail Transit (SMART) District. 2005. Draft Environmental Impact Report, Sonoma-Marin Area Rail Transit, SCH # 2002112033. November.

Population and Housing

Association of Bay Area Governments (ABAG). 2013. Final Regional Housing Needs Allocation, 2015-2023. Adopted July 18, 2013. https://abag.ca.gov/sites/default/files/2015-2023_rhna_allocations.pdf (accessed January 2022).

_____. 2017. Projections 2040. <http://projections.planbayarea.org/data> (accessed January 2022).

_____. 2021. Draft RHNA Methodology and Final Subregional Shares. January 21, 2021. <https://abag.ca.gov/our-work/housing/rhna-regional-housing-needs-allocation> (accessed January 2022).

California Department of Finance. 2007. E-8 Historical Population and Housing Estimates for Cities, Counties and the State, 1990-2000. August 2007. <http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-8/> (accessed January 2022).

_____. 2019. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2019 with 2010 Census Benchmark. May 1, 2019. <http://www.dof.ca.gov/Forecasting/Demographics/Estimates/e-5/> (accessed January 2022).

California Department of Forestry and Fire Protection (CAL FIRE). 2019. Kincade Fire. <https://www.fire.ca.gov/incidents/2019/10/23/kincade-fire/> (accessed January 2022).

_____. 2020. Glass Fire. Last Updated October 20, 2020. <https://www.fire.ca.gov/incidents/2020/9/27/glass-fire/> (accessed January 2022).

Graff, Amy. 2020. Cal Fire releases more detailed numbers on destroyed homes in LNU Complex. September 2, 2020. SF Gate. <https://www.sfgate.com/bayarea/article/Cal-Fire-destroyed-homes-LNU-Complex-wildfires-15538157.php> (accessed January 2022).

Sonoma, County of. 2018. Sonoma County Complex Fires: Housing and Fiscal Impact Report. Beacon Economics. February 2018.

_____. 2020a. Recorded City Annexations – To Date. February 4, 2020. <https://sonomacounty.ca.gov/WorkArea/DownloadAsset.aspx?id=2147565746> (accessed January 2022).

_____. 2020b. Need for New Housing. <https://sonomacounty.cca.gov/PRMD/Regulations/Housing/Housing-Initiatives/Housing-Need/> (accessed January 2022).

_____. 2020c. Summary Report. August 18, 2020.

US Census Bureau. 2020. Definitions and Explanations. <https://www.census.gov/housing/hvs/definitions.pdf> (accessed March 2020).

Public Services and Recreation

California Department of Finance (DOF). 2020. California Public K-12 Graded Enrollment and High School Graduate Projections by County – 2019 Series. January 2020.

http://www.dof.ca.gov/Forecasting/Demographics/Projections/Public_K-12_Graded_Enrollment/ (accessed May 2020).

California Department of Forestry and Fire Protection (CAL FIRE). 2020. About Us. <https://www.fire.ca.gov/about-us/> (accessed June 2020).

Davis-Brown, Karen. 2020. Personal correspondence via email between Aileen Mahoney (Rincon Consultants), and Karen Davis-Brown (Sonoma County Parks) regarding park acreages. June 8, 2020.

Forestville Fire Protection District. 2020. Home. <http://www.forestvillefire.org/> (accessed August 2020).

Sonoma County Fire District. 2020. About Us. <https://sonomacountyfd.specialdistrict.org/about-us> (accessed August 2020).

Sonoma County Library. 2015. Strategic Plan 2015-2020. https://sonomalibrary.org/sites/default/files/reports/SCL_StrategicPlan_20160811.pdf (accessed January 2022).

_____. 2006. Sonoma County General Plan 2020 Draft Environmental Impact Report. Santa Rosa, CA. January 2006. (accessed January 2022).

_____. 2016. Sonoma County Hazard Mitigation Plan. Figure 8.10 Fire Districts & Fire Stations. <https://sonomacounty.ca.gov/PRMD/Long-Range-Plans/Hazard-Mitigation/Fire-Districts-and-Stations-Map/> (accessed January 2022).

Sonoma County Office of Education. 2020. Sonoma County School District. https://www.scoe.org/files/district_map.pdf (accessed January 2022).

Sonoma Local Agency Formation Commission. 2013. Guide to Special District. January 2013. <http://sonomacounty.ca.gov/WorkArea/DownloadAsset.aspx?id=2147536334> (accessed January 2022).

Wilmar Volunteer Fire Department. 2020. Donate. <http://wilmarfire.com/donate.html> (accessed January 2022).

Transportation

County of, Sonoma. 2016. Sonoma County General Plan 2020: Circulation and Transit Element. Adopted September 2008 and Amended August 2016. Available online: <https://sonomacounty.ca.gov/PRMD/Long-Range-Plans/General-Plan/Circulation-and-Transit/> (accessed January 2022).

_____. 2010. Bicycle and Pedestrian Plan. Available online: <https://sonomacounty.ca.gov/PRMD/Long-Range-Plans/Bicycle-and-Pedestrian-Plan/> (accessed January 2022).

_____. 2020. Comprehensive Airport Land Use: Boundaries. Available online: <https://sonomacounty.ca.gov/PRMD/Long-Range-Plans/Comprehensive-Airport-Land-Use/Boundaries/> (accessed January 2022).

Tribal Cultural Resources

Bean, Lowell J. and Dorothea Theodoratus. 1978. Western Pomo and Northeastern Pomo in California. Volume 8: Handbook of North American Indians. Robert F. Heizer, ed. and

- William C. Sturtevant, general ed. Pp. 539-549. Washington D.C.: Smithsonian Institution Scholarly Press.
- Kelly, Isabel. 1978. Coast Miwok in California. Volume 8: Handbook of North American Indians. Robert F. Heizer, ed. and William C. Sturtevant, general ed. Pp. 539-549. Washington D.C.: Smithsonian Institution Scholarly Press.
- Kroeber, Alfred L. 1925. Handbook of the Indians of California. New York, New York: Dover Publications, Inc.
- Sawyer, Jesse O. 1978. Wappo in California. Volume 8: Handbook of North American Indians. Robert F. Heizer, ed. and William C. Sturtevant, general ed. Pp. 539-549. Washington D.C.: Smithsonian Institution Scholarly Press.
- Siskin, Barb, Caretti, G. ,and McWaters, J. 2021. Archaeological Survey Report for the Bohemian Highway Bridge (20C0018), Replacement Project in Monte Rio, Sonoma County, California. Far Western Anthropological Research Group, Inc.

Utilities and Service Systems

- California Cable & Telecommunications Association. 2020. "Cable in California." <https://calcable.org/learn/cable-in-california/> (accessed January 2022). California Department of Resources Recycling and Recovery (CalRecycle). 2020a. Estimated Solid Waste Generation Rates. <https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates> (accessed January 2022).
- _____. 2020b. Calculations: Solid Waste Cleanup Program Weights and Volumes for Project Estimates. <https://www.calrecycle.ca.gov/swfacilities/cdi/tools/calculations> (accessed January 2022).
- _____. 2020c. SWIS Facility/Site Search. <https://www2.calrecycle.ca.gov/swfacilities/Directory/07-AA-0002/Index> (accessed January 2022).
- California Energy Commission (CEC). 2018a. Gas Consumption by Entity. <http://www.ecdms.energy.ca.gov/gasbyutil.aspx> (accessed January 2022).
- _____. 2018b. Gas Consumption by County. <http://www.ecdms.energy.ca.gov/gasbycounty.aspx> (accessed January 2022).
- _____. 2020b. Natural Gas Utility Service Area. California, 2020. <https://data.cnra.ca.gov/dataset/energy-and-utility-service-areas/resource/0af35a09-a08d-4b71-b104-c7152ec1f293> (accessed May 2020).
- _____. 2020c. "Core Responsibility Fact Sheets." <https://www.energy.ca.gov/about/core-responsibility-fact-sheets-0> (accessed May 2020).
- California Public Utilities Commission (CPUC). 2010. Telephone Exchange Areas. 2010. <https://www.cpuc.ca.gov/boundarymaps/> (accessed January 2022).
- _____. 2020a. "Glossary of Acronyms and Other Frequently Used Terms." <https://www.cpuc.ca.gov/General.aspx?id=1195> (accessed January 2022).
- _____. 2020b. "Electrical and Natural Gas." <https://www.cpuc.ca.gov/energy/> (accessed January 2022).

_____. 2020c. “Communications: Telecommunications and Broadband.”
<http://www.cpuc.ca.gov/Communications/> (accessed January 2022).

Sonoma, County of. 2020. About Integrated Waste Operations
<http://sonomacounty.ca.gov/TPW/Integrated-Waste/Integrated-Waste-Operations/>
(accessed May 2020).

Water Board. 2020. CA Drinking Water Watch: Water System Details.
https://sdwis.waterboards.ca.gov/PDWW/JSP/WaterSystemDetail.jsp?tinwsys_is_number=5484&tinwsys_st_code=CA&wsnumber=CA4910003 (accessed October 2020).

Zero Waste Sonoma. 2020. “Who’s My Hauling Company?” <https://zerowastesonoma.gov/disposal-options/whos-my-waste-hauler> (accessed May 2020).

Wildfire

California Department of Forestry and Fire Protection (CAL FIRE). 2007a. Fire Hazard Severity Zones in SRA. Adopted November 7, 2017. <https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/> (accessed January 2022).

_____. 2007b. Fact Sheet: California’s Fire Hazard Severity Zones. May 2007.
https://www.sccgov.org/sites/dpd/DocsForms/Documents/Fire_Hazard_Zone_Fact_Sheet.pdf (accessed January 2022).

_____. 2019a. 2019 Incidents. <https://www.fire.ca.gov/incidents/2019/> (accessed January 2022).
_____. 2020a. Fire and Fuels Treatment. <https://www.fire.ca.gov/programs/resource-management/resource-protection-improvement/landowner-assistance/forest-stewardship/fire-and-fuels-treatment/> (accessed January 2022).

California Natural Resources Agency. 2018. Final Statement of Reasons for Regulatory Action. Amendments to the State CEQA Guidelines. OAL Notice File No. Z-2018-0116-12
http://resources.ca.gov/ceqa/docs/2018_CEQA_Final_Statement_of%20Reasons_111218.pdf (accessed January 2022).

California Office of Emergency Services (CalOES). 2019. Coastal Region Operational Area Assignments. October 1, 2019.
https://www.caloes.ca.gov/RegionalOperationsSite/Documents/EMA_ESC_OA_Assignments_Coastal.pdf (accessed January 2022).

_____. 2020. Standardized Emergency Management System. <https://www.caloes.ca.gov/cal-oes-divisions/planning-preparedness/standardized-emergency-management-system> (accessed January 2022).
_____. 2017b. Standards for Operation, Reliability, and Safety During Emergencies and Disasters. Revised December 14, 2017.
<http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M209/K451/209451792.pdf> (accessed January 2022).

_____. 2018b. Pacific Gas and Electric Company’s Annual Report on Compliance with General Order 166. October 31, 2018.
https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Safety/Electric_Safety_and_Reliability/Filings/2018%20PGE%20GO%20166.pdf (accessed January 2022).

Fire Safe Sonoma. 2016. Sonoma County Community Wildfire Protection Plan. September 20, 2016.
<https://www.firesafesonoma.org/documents-resources/> (accessed January 2022).

- National Oceanic and Atmospheric Administration. 2020. U.S. Wind Climatology. March 2020. <https://www.ncdc.noaa.gov/societal-impacts/wind/u-comp/202002> (accessed January 2022).
- National Park Service. 2017. Wildland Fire Behavior. Last updated February 16, 2017. <https://www.nps.gov/articles/wildland-fire-behavior.htm> (accessed January 2022).
- Sonoma, County of. 2014. Sonoma County / Operational Area Emergency Operations Plan. December 2014. <https://sonomacounty.ca.gov/Emergency-Management/> (accessed January 2022).
- _____. 2017. 2016 Sonoma County Hazard Mitigation Plan Update. <https://sonomacounty.ca.gov/PRMD/Long-Range-Plans/Hazard-Mitigation/Approved-Update/> (accessed January 2022).
- United States Department of the Interior, USDA, and CAL FIRE. 2018. 2018-2023 California Master Cooperative Wildland Fire Management and Stafford Act Response Agreement. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5350828.pdf (accessed January 2022).
- University of California. 2018. Field Operations Manual. Revised November 2018. <https://www.ucop.edu/safety-and-loss-prevention/files/field-research-safety/wildland-fire-safety.pdf> (accessed January 2022).
- Western Regional Climate Center. 2016. Period of Record Monthly Climate Summary. Sonoma, California (048351); Petaluma AP, California (046826); Graton, California (043578); and Cloverdale, California (041838). <https://wrcc.dri.edu/sod/arch/faF.html> (accessed January 2022).

Other CEQA

- Association of Environmental Professionals. State CEQA Guidelines. 2021. Governor's Office of Planning and Research.

Alternatives

- Drake Haglan and Associates. 2013. Russian River Bridge at Monte Rio Replacement vs. Rehabilitation Study. Sacramento, CA.
- _____. 2012. Russian River Bridge at Monte Rio Seismic Retro Strategy Report. Sacramento, CA.

7.2 List of Preparers

This EIR was prepared by the County of Sonoma, with the assistance of Consultant staff involved in the preparation of the technical reports are listed below.

SONOMA COUNTY PERMIT AND RESOURCE MANAGEMENT DEPARTMENT

Jackson Ford, Senior Environmental Specialist
Robert Aguero, Senior Environmental Specialist
Deborah Waller, Senior Environmental Specialist
Rich Stabler, Senior Environmental Specialist
Chris Seppeler, Senior Environmental Specialist

SONOMA COUNTY DTPW

Samuel Baumgardner-Kranz, Senior Engineer

CONSULTANTS

BIGGS CARDOSA ASSOCIATES

1111 Broadway, Suite 1510
Oakland, CA 94607
Sarah Moyles, PE, Engineering Manager

GPA CONSULTING

840 Apollo Street, Suite 312
El Segundo, CA 90245

FAR WESTERN ANTHROPOLOGICAL RESEARCH GROUP

272 Del Rio Place, Suite A
Davis, CA 95618

BKF ENGINEERING

200 4th St Suite 2040
Santa Rosa, CA 95401

ILLINGWORTH & RODKIN, INC.

505 Petaluma Blvd. South
Petaluma, CA 94952

AGENCIES AND PERSONS CONSULTED

1. NOAA Fisheries – Jodi Charrier
2. Sonoma County Landmarks Commission – Eric Gage (Staff).

This page intentionally left blank.