Honeydew Bridge (No. 4C-055) Replacement Project

HUMBOLDT COUNTY, CALIFORNIA
DISTRICT 01-HUM-CR-0
EA 01-279414L
Federal Project No. STPLZ 5904(024)

Final Environmental Impact Report/Environmental Assessment and Section 4(f) Evaluation with Finding of No Significant Impact

Prepared by
State of California Department of Transportation
and Humboldt County Public Works Department

The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 USC 327 and the Memorandum of Understanding dated December 23, 2016, and executed by FHWA and Caltrans.

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

January 2022

General Information About This Document

What's in this document:

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA), and the Humboldt County Public Works Department have prepared this Final Environmental Impact Report/Environmental Assessment (EIR/EA) and Section 4(f) Evaluation for the proposed Honeydew Bridge Replacement Project (project). Caltrans is the lead agency under the National Environmental Policy Act (NEPA). Humboldt County Public Works Department is lead agency under the California Environmental Quality Act (CEQA). This document describes the purpose and need for the proposed project; the proposed project design; the anticipated environmental impacts associated with each project alternative; and proposed avoidance, minimization, and mitigation or compensation measures. The Draft EIR/EA was circulated to the public for 45 days between October 29, 2021, and December 13, 2021. No comments were received during this review period. Elsewhere throughout this document, underlined text indicates a change made since the draft document circulation. Minor editorial changes and clarifications are not indicated. The document is available in electronic format at:

https://humboldtgov.org/2216/Honeydew-Bridge-Replacement

Additional copies of this document are available for review at:

- Caltrans District 1 Headquarters, 1656 Union Street, Eureka, CA 95501
- Humboldt County Public Works Department, 1106 2nd Street, Eureka, CA 95501
- Humboldt County Library, 1313 3rd St., Eureka CA 95521
- Honeydew Country Store and U.S. Post Office, 44670 Mattole Road, Honeydew, CA 95545
- Petrolia General Store, 40 Sherman Road, Petrolia, CA 95558

Alternative Formats:

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans District 1, Attn: Mr. Darrell Cardiff, Senior Environmental Planner, P.O. Box 3700, Eureka, CA 95502-3700; or call (707) 298-0904 (voice), use the California Relay Service 1 (800) 735-2929 (TTY to Voice), 1 (800) 735-2929 (Voice) or 711; 1 (800) 855-3000 (Spanish TTY to Voice and Voice to TTY), 1-800-854-7784 (Spanish and English Speech-to-Speech)"or via email at darrell.cardiff@dot.ca.gov.

SCH# 2017022027
Federal Aid Project No. STPLZ 5904(024)
EA 01-279414L/01-HUM-CR-0

Replace the existing Honeydew Bridge on Mattole Road
over the Mattole River in Humboldt County, California

FINAL ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL ASSESSMENT AND SECTION 4(F) EVALUATION with FINDING OF NO SIGNIFICANT IMPACT
Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 USC 4332(2)(C), 49 USC 303

THE STATE OF CALIFORNIA
Department of Transportation and
Humboldt County Public Works Department

Cooperating Agencies: U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Federal Highway Administration

Responsible Agencies: California Transportation Commission, North Coast Regional Water Quality Control Board, California Department of Fish and Wildlife,
State Historic Preservation Officer

January 2022

01/20/2022
Date of Approval

Matthew Brady
District Director
California Department of Transportation
NEPA Lead Agency

1/19/2022
Date of Approval

Andrew Bundschuh
Environmental Permitting and Compliance Manager
Humboldt County Public Works Department

The following person may be contacted for more information about this document:

California Department of Transportation, District 1
Attn: Mr. Darrell Cardiff, Senior Environmental Planner
Division of Local Assistance
1656 Union Street, Eureka, CA 95501
(707) 298-0904

CALIFORNIA DEPARTMENT OF TRANSPORTATION FINDING OF NO SIGNIFICANT IMPACT (FONSI)

FOR

Honeydew Bridge (No. 4C-55) Replacement Project

EA 01-279414L
Federal Project No. STPLZ 5904(024)

The California Department of Transportation (Caltrans) has determined that Alternative 2, Steel Girder Bridge on Existing Alignment, will have no significant impact on the human environment.

This FONSI is based on the attached Environmental Assessment (EA) and associated technical studies, which have been independently evaluated by Caltrans and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an Environmental Impact Statement is not required. Caltrans takes full responsibility for the accuracy, scope, and content of the attached EA and associated technical studies.

The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 USC 327 and the Memorandum of Understanding dated December 23, 2016, and executed by FHWA and Caltrans.

01/20/2022
Date

Matthew Brady
District Director
California Department of Transportation
NEPA Lead Agency

Summary

NEPA Assignment

California participated in the “Surface Transportation Project Delivery Pilot Program” (Pilot Program) pursuant to 23 United States Code (USC) 327, for more than 5 years, beginning July 1, 2007, and ending September 30, 2012. MAP-21 (P.L. 112-141), signed by President Obama on July 6, 2012, amended 23 USC 327 to establish a permanent Surface Transportation Project Delivery Program. As a result, the Department entered into a Memorandum of Understanding pursuant to 23 USC 327 (NEPA Assignment MOU) with FHWA. The NEPA Assignment MOU became effective October 1, 2012, and was renewed on December 23, 2016, for a term of 5 years. In summary, the Department continues to assume FHWA responsibilities under NEPA and other federal environmental laws in the same manner as was assigned under the Pilot Program, with minor changes. With NEPA Assignment, FHWA assigned and the Department assumed all the U.S. Department of Transportation (USDOT) Secretary's responsibilities under NEPA. This assignment includes projects on the State Highway System and Local Assistance Projects off of the State Highway System within the State of California, except for certain categorical exclusions that FHWA assigned to the Department under the 23 USC 326 CE Assignment MOU, projects excluded by definition, and specific project exclusions.

Introduction

The Humboldt County Public Works Department (County) proposes to replace the Honeydew Bridge on Mattole Road over the Mattole River in Humboldt County. The existing bridge is structurally deficient, functionally obsolete, and does not comply with modern geometric and seismic standards. Caltrans is the lead agency responsible for preparing the Final EA in compliance with the NEPA and the County is the lead agency responsible for preparing the EIR in compliance with CEQA. This joint Final EIR/EA and Section 4(f) Evaluation for the proposed Honeydew Bridge Replacement Project (project) evaluated the following four project alternatives:

- No-Build Alternative
- Alternative 1 - Camelback Through-Truss Bridge
- Alternative 2 (Preferred Alternative) - Composite Welded Steel Girder Bridge
- Alternative 3 - Precast-Prestressed Concrete Spliced Girder Bridge

Joint CEQA/NEPA Document

The project is subject to federal as well as County and state environmental review requirements. The County proposes the use of federal funds from the FHWA and/or the project requires an approval from FHWA. Project documentation, therefore, has been prepared in compliance with both CEQA and NEPA. The County is the project proponent and the lead agency under CEQA. FHWA’s responsibility for environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project will be carried out by Caltrans pursuant to 23 United States Code Section 327 (23 USC 327) and the MOU dated December 23, 2016, and executed by FHWA and Caltrans. With NEPA Assignment, FHWA assigned, and Caltrans assumed, all the USDOT Secretary's responsibilities under NEPA. This assignment includes

projects on the State Highway System and Local Assistance Projects off of the State Highway System within the State of California, except for certain categorical exclusions that FHWA assigned to Caltrans under the 23 USC 326 CE Assignment MOU, projects excluded by definition, and specific project exclusions.

Some impacts determined to be significant under CEQA may not lead to a determination of significance under NEPA. Because NEPA is concerned with the significance of the project as a whole, often a lower-level document is prepared for NEPA. One of the most common joint document types is an EIR/EA.

The County and Caltrans prepared a Draft EIR/EA, which was finalized on October 4th, 2021. The Draft EIR/EA was circulated to the public from October 29, 2021 to December 13, 2021 for review and comment. After circulating the Draft EIR/EA—no comments from the public and reviewing agencies were received—this Final EIR/EA has been prepared.

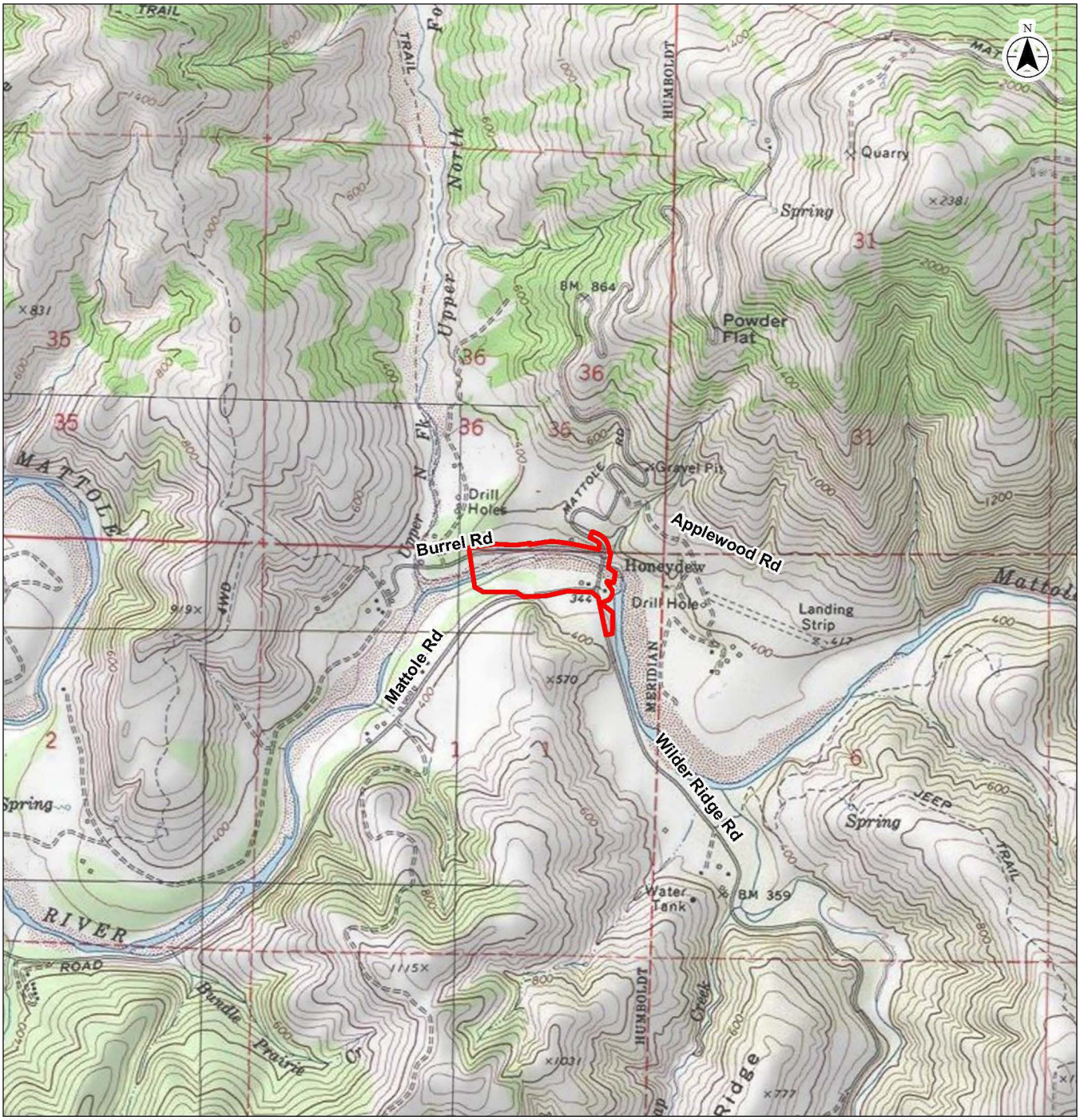
This document includes minor revisions to the Draft EIR/EA and has identified Alternative 2, Steel Girder Bridge on Existing Alignment, as the preferred alternative. Caltrans has decided to issue a Finding of No Significant Impact (FONSI) for compliance with NEPA. The County will issue a Notice of Determination (NOD) that will be published for compliance with CEQA, and a Notice of Availability (NOA) of the FONSI will be sent to the affected units of federal, state, and local government, and to the State Clearinghouse in compliance with EO 12372.

Overview of the Project Area

Honeydew Bridge is within the unincorporated community of Honeydew in southwestern Humboldt County, California (see Figure S-1). Honeydew lies along Mattole Road, which is a rural, two-lane road that stretches from Highway 101 through the communities of Bull Creek, Honeydew, and Petrolia. North of Petrolia it parallels the Pacific Coast in an area known as the “Lost Coast” and turns inland where it terminates in the city of Ferndale. Wilder Ridge Road intersects Mattole Road just south of Honeydew Bridge. Burrel Road intersects Mattole Road just north of Honeydew Bridge and continues 2 miles west where it parallels the Mattole River. Rural residences line Mattole Road near the approximately 28.10-acre project area footprint.

The Honeydew Country Store/Post Office is near the southwest corner of the Honeydew Bridge near the intersection of Wilder Ridge Road and Mattole Road. The existing Honeydew Bridge was built in 1920 by Humboldt County and was repaired in 1975. It serves as a vital crossing of the Mattole River for the community of Honeydew and surrounding areas.

Humboldt Redwoods State Park is approximately 4.5 miles northeast of the project area and contains many roads and recreational trails, including a stretch of Mattole Road.



Study Area (28.10 acres)

0 2,000 Feet

1 inch = 2,000 feet (At page size of 8.5"x11")

Stantec

Project Location
Humboldt County, California

2272005100
Prepared by TM on 2019-05-17
Revised by ST on 2020-06-17

Client/Project
Humboldt County
Honeydew Bridge Replacement Project

Figure No.
S-1

Title
Project Location

Notes
1. Coordinate System: NAD 1983 StatePlane California I FIPS 0401 Feet
2. Base map: ESRI USA Topo Maps web mapping service
3. Public Land Survey: T02S, R01W, Sec. 36, T03S, R01W, Sec. 1
4. USGS 7.5 Quad: Honeydew 1970, Shubrick Peak 1969

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Purpose and Need

The purpose of the project is to provide a regional road crossing over the Mattole River that meets modern highway design standards, accommodates local and regional transportation needs, and provides an increased level of public safety for vehicles, pedestrians, and bicyclists. The project would also satisfy immediate goals identified by the County under the FHWA, Highway Bridge Replacement and Rehabilitation Program.

Project need stems from a 1997 resolution passed by the County Board of Supervisors that stated the need for the bridge to be replaced. This resolution was based on the finding from a Caltrans Structure Maintenance inspection that identified a low sufficiency rating. The existing bridge is near the end of its service life and is considered structurally deficient. It does not comply with modern geometric and seismic standards. The bridge consists of only one travel lane, lacks a standard shoulder width, and does not provide safe passage for pedestrians and bicyclists.

In addition, the existing bridge cannot accommodate large permit loads and emergency response equipment due to its limited lane width, low overhead truss height, and structural limitations for weight loading. Costs are prohibitive for long-term life cycle repair and maintenance, and it is structurally infeasible to widen the existing bridge or increase its height capacity.

Project Alternatives

The four project alternatives considered in this document are the No-Build Alternative and three build alternatives including the recommended Preferred Alternative.

All three build alternatives would cross the Mattole River using a two-span configuration. Also common to all three would be the construction of the north abutment, which would be supported by steel H-piles, and the south abutment and center pier, which would be supported by cast-in-drilled-hole (CIDH) piles. Staging would occur at three locations: (1) along Wilder Ridge Road, just southeast of the intersection with Mattole Road; (2) all along the south bank gravel bar near and beneath the existing bridge; and (3) at the north Mattole Road bridge approach. Table S-1 summarizes the principal design features of these four project alternatives (i.e., No-Build and Alternatives 1 through 3), which are described in Section 1.3 of this EIR/EA.

Table S-1. Summary of Key Differences Among Alternatives

Alternative	Design Style	Minimum Hydraulic Clearance (feet) (approximate)	Superstructure Depth (feet) (approximate)	Vertical Clearance (feet) (approximate)
No-Build Alternative (Existing Bridge)	Camelback Truss	11	4	14
Alternative 1	Steel, Camelback Through-Truss (similar to the existing bridge)	11 (at south abutment)	3.5	15.7

Alternative	Design Style	Minimum Hydraulic Clearance (feet) (approximate)	Superstructure Depth (feet) (approximate)	Vertical Clearance (feet) (approximate)
Alternative 2 (Preferred Alternative)	Haunched, Composite Welded Steel Girder	5.1 (at pier)	10.5	No limit
Alternative 3	Haunched, Precast-Prestressed Concrete Spliced Girder	5.7 (at pier)	9.8	No limit

After comparing and weighing the benefits and impacts of all feasible alternatives, the project development team has identified Alternative 2 as the recommended Preferred Alternative, subject to public review and comment. Final identification of a preferred alternative will occur after the public review and comment period. The Preferred Alternative must meet the project's purpose and need while minimizing temporary and permanent impacts on the natural and human environments.

Proposed Action

The project would replace the existing 386-foot-long by 17-foot-wide, single-lane, two-span, steel camelback through-truss style bridge with a new 375-foot structure that would carry two lanes of traffic, each 11 feet wide with 2-foot-wide bridge rails and 3-foot shoulders for a total width of 32 feet. The new bridge would consist of two equal spans and be supported by a north and south abutment and a center pier. The recommended Preferred Project Alternative, action Alternative 2 (described in Section 1.3.3), would consist of a haunched, composite welded steel girder structure and new roadway approaches.

The project would require a temporary detour bridge to maintain access over the Mattole River during construction. The detour bridge would be constructed approximately 1,600 feet downstream (west) from the existing bridge. Figure S-2 shows the project area and proposed detour bridge location. The detour bridge would maintain a through-traffic connection between Mattole Road on the north and south sides of the Mattole River, while also providing construction access for the duration of the project. The detour bridge would cross the main channel of the Mattole River and would consist of a single-span, prefabricated bridge provided by the contractor. It would span from a temporary gravel approach road at the south riverbank to a temporary gravel approach on the north bank, connecting to Burrell Road.

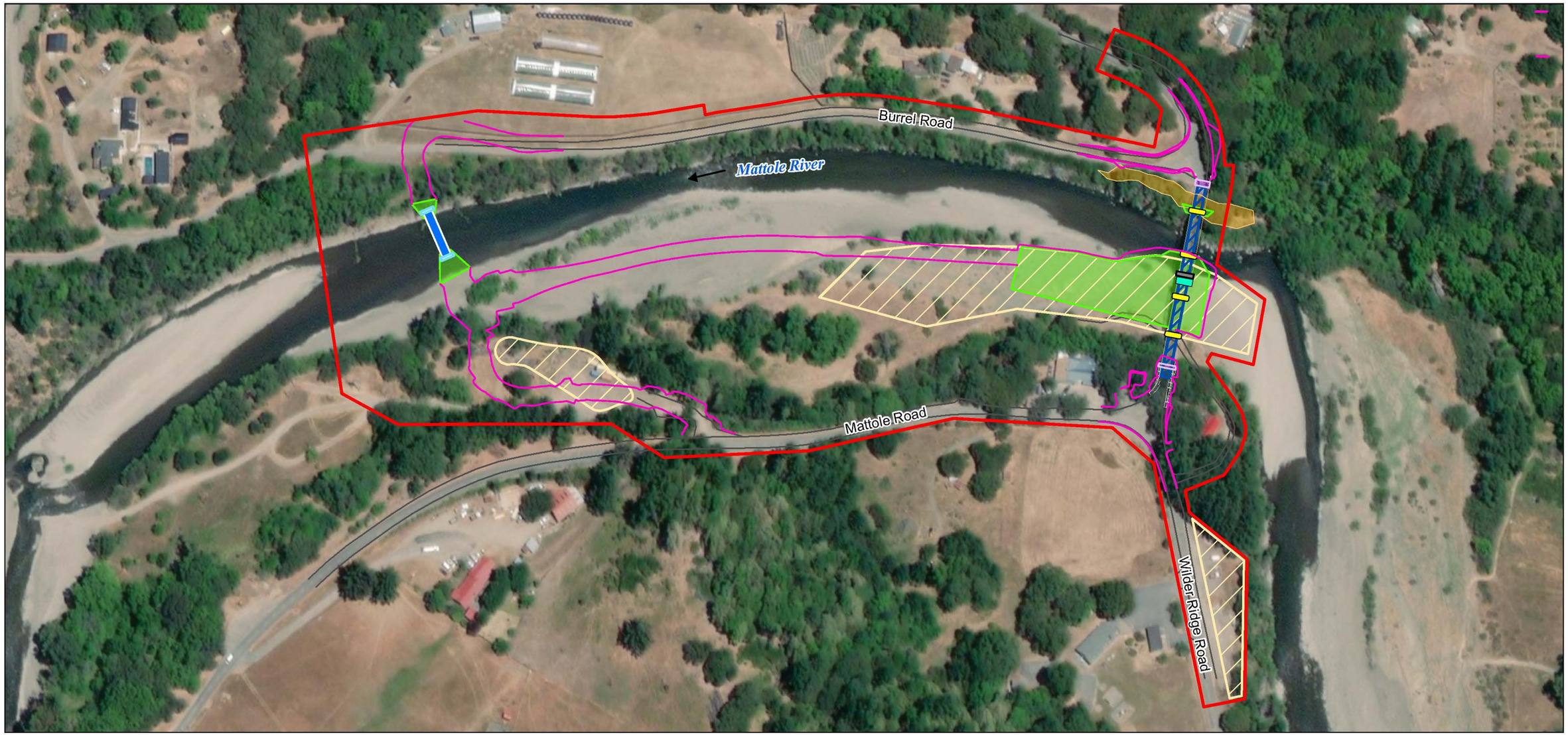
During the second season of construction, the existing bridge would be removed to allow for construction of the new bridge in a similar alignment. An interpretive site, including a memorial plaque, would be established near the northwest corner of the new bridge alignment to commemorate the history of the existing bridge.

Estimated Cost

The estimated cost for construction of the Preferred Project Alternative would be between $7,000,000 and $9,000,000.

Project Impacts

Table S-2 summarizes the permanent adverse effects of the project alternatives. Avoidance, minimization, and mitigation measures proposed to reduce the effects of the build alternatives are also presented. Complete descriptions of potential adverse effects, including temporary construction effects and recommended measures to reduce those effects are described in further detail in Chapter 2.0, Affected Environment, Environmental Consequences, and Avoidance, Minimization, and Mitigation Measures of this EIR/EA. The existing Honeydew Bridge was determined to be eligible for inclusion in the National Register of Historic Places under Criterion C, as a rare example of a camelback truss bridge; therefore, a study assessing impacts specific to a Section 4(f) resources is appended to this EIR/EA (Appendix A).



Notes

1. Coordinate System: NAD 1983 StatePlane California I FIPS 0401 Feet
2. Base map: ESRI World Imagery Web Mapping Service, Vivid, Maxar, 7/2/2019

- Study Area (28.10 acres)
- Contractor Staging Area
- Honeydew Bridge
- Existing Pier
- Footing
- New Abutment
- New Pier
- Rock Protection Limits
- Temporary Detour Bridge
- Temporary Gravel Work Pad/Detour Bridge Abutment (with Sheet Piling Retaining Systems)
- Temporary Shoring Tower
- Cut and Fill
- Concrete
- Existing Roadway

0 200 Feet
1 inch = 200 feet (At page size of 11"x17")

N

Stantec

Project Location
Humboldt County, California

227200510O

Prepared by TM on 2020-08-07
TR by ST on 2020-08-14

Client/Project
Humboldt County
Honeydew Bridge Replacement Project

Figure No.
S-2

Title
Proposed Project Alignment/Layout

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Table S-2. Impacts Summary Table

Resource	No-Build Alternative	Alternative 1 - Camelback Through-Truss Bridge	Alternative 2 - (Recommended Preferred Alternative): Haunched Composite Welded Steel Girder Bridge	Alternative 3 - Haunched Precast-Prestressed Concrete Girder	Avoidance, Minimization, and/or Mitigation Measures
HUMAN ENVIRONMENT					
Land Use					
Consistency with state, regional, and local plans and programs	Not consistent	Consistent	Consistent	Consistent	None
Change in land use	None	Temporary changes due staging, detour, and access of some areas during construction	Same as Alternative 1, shortest construction time	Same as Alternative 1, longest construction time	None
Physically divide an established community?	None	None. Temporary detour would be used to maintain community connectivity.	Same as Alternative 1, shortest construction time	Same as Alternative 1, longest construction time	None
Community Impacts					
Community character and cohesion	None	None. Temporary detour would be used to maintain community connectivity.	Same as Alternative 1, shortest construction time	Same as Alternative 1, longest construction time	None
Relocations and real property acquisitions	None	Temporary construction easements required	Same as Alternative 1	Same as Alternative 1	None
Environmental Justice	None	None	None	None	None
Utilities and Emergency Services					
Utilities	Inadequate access for heavy equipment	None	None	None	None

Resource	No-Build Alternative	Alternative 1 - Camelback Through-Truss Bridge	Alternative 2 - (Recommended Preferred Alternative): Haunched Composite Welded Steel Girder Bridge	Alternative 3 - Haunched Precast-Prestressed Concrete Girder	Avoidance, Minimization, and/or Mitigation Measures
Emergency services	Inadequate access for heavy equipment including some emergency fire vehicles	Temporary detour bridge would be used for two summer seasons	Same as Alternative 1	Same as Alternative 1	AMM EMER-1: Coordinate with local emergency service providers during construction.
Traffic and Transportation/Pedestrian and Bicycle Facilities					
Temporary construction effects	None	Use of a 0.6-mile detour and detour bridge during two summer seasons	Same as Alternative 1, shortest construction time	Same as Alternative 1, longest construction time	AMM TRANS-1: Require a construction traffic management plan.
Operational traffic effects	Limited vertical clearance and single lane of traffic	Addition of a second lane of traffic, wider shoulders, and increased vertical clearance would maintain traffic circulation.	Addition of a second lane of traffic, wider shoulders, and no vertical clearance limit would maintain traffic circulation.	Same as Alternative 2	None
Safety and Seismic Criteria	Poses safety concerns and would not meet modern seismic design criteria	Would meet modern safety and seismic design criteria	Same as Alternative 1	Same as Alternative 1	None
Pedestrians and Bicycles	Unsafe crossing conditions for pedestrians and bicyclists	Would provide 2-foot-wide shoulders for pedestrians and bicyclists	Same as Alternative 1	Same as Alternative 1	None
Visual/Aesthetics					
Degradation of existing visual character or quality	None	Unavoidable adverse effect. Temporary visual intrusions during construction. New bridge would change the existing visual character, but Alternative 1 would be the	Unavoidable adverse effect. Temporary visual intrusions during construction. New bridge would permanently change the existing visual character.	Same as Alternative 1	AMM VIS-1: Manipulate landscape components to buffer sensitive receptors during construction. AMM VIS-2: Revegetate temporarily disturbed areas.

Resource	No-Build Alternative	Alternative 1 - Camelback Through-Truss Bridge	Alternative 2 - (Recommended Preferred Alternative): Haunched Composite Welded Steel Girder Bridge	Alternative 3 - Haunched Precast-Prestressed Concrete Girder	Avoidance, Minimization, and/or Mitigation Measures
		most consistent with the existing visual environment.			AMM-3: Use compatible construction materials. AMM-4: Minimize road cut slope gradients.
Cultural Resources					
Create an adverse change in the significance of a historical resource	None	The existing bridge is a significant historical resource, eligible for listing in the National Register of Historic Places. Replacement would be a significant and unavoidable impact.	Same as Alternative 1	Same as Alternative 1	AMM CUL-1: Inadvertent Discovery of Cultural Resources
Create an adverse change in the significance of an archaeological resource	None	None expected	None expected	None expected	AMM CUL-1: Inadvertent Discovery of Cultural Resources
Disturbance to human remains	None	None expected	None expected	None expected	AMM CUL-2: Inadvertent Discovery of Human Remains
Affect tribal cultural resources	None	None expected	None expected	None expected	AMM CUL-1: Inadvertent Discovery of Cultural Resources AMM CUL-2: Inadvertent Discovery of Human Remains
Public Services					
Affect public facilities or	None	Temporary detour bridge would be used for two summer seasons	Same as Alternative 1	Same as Alternative 1	AMM EMER-1: Coordinate with local emergency

Resource	No-Build Alternative	Alternative 1 - Camelback Through-Truss Bridge	Alternative 2 - (Recommended Preferred Alternative): Haunched Composite Welded Steel Girder Bridge	Alternative 3 - Haunched Precast-Prestressed Concrete Girder	Avoidance, Minimization, and/or Mitigation Measures
services (i.e., parks, schools)					service providers during construction.
Recreation					
Affect recreational facilities	None	None	None	None	None
PHYSICAL ENVIRONMENT					
Hydrology and Floodplain					
Expose people/structures to a significant risk of loss	Higher potential for flooding potential than build alternatives due to soffit elevation 3 feet lower and potential drift accumulation	In-channel construction would be limited to the summer low-flow period (June–October). Temporary project features would not be left in the channel over winter. The new bridge would meet or exceed modern hydraulic design criteria.	Same as Alternative 1	Requires use of temporary in-channel falsework; otherwise, same as Alternative 1.	AMM HYDRO-1: Erosion and Sediment Control AMM HYDRO-2: Prevention of Accidental Spills
Encroachment on 100-year floodplain	None	In-channel construction would be limited to the summer low-flow period (June–October). Temporary project features would not be left in the channel over winter.	Same as Alternative 1	Requires use of temporary in-channel falsework; otherwise, same as Alternative 1.	AMM HYDRO-1: Erosion and Sediment Control AMM HYDRO-2: Prevention of Accidental Spills
Water Quality and Stormwater Runoff					
Result in substantial drainage pattern alteration	None	No effect	No effect	No effect	

Resource	No-Build Alternative	Alternative 1 - Camelback Through-Truss Bridge	Alternative 2 - (Recommended Preferred Alternative): Haunched Composite Welded Steel Girder Bridge	Alternative 3 - Haunched Precast-Prestressed Concrete Girder	Avoidance, Minimization, and/or Mitigation Measures
Violate water quality standards and/or substantially degrade water quality during construction	None	No violations, but temporary minor effects on water quality	Same as Alternative 1	Same as Alternative 1	AMM HYDRO-1: Erosion and Sediment Control AMM HYDRO-2: Prevention of Accidental Spills MM WET-1: Section 404 and 401 Regulatory Permit Authorizations MM WET-2: Section 1600 Lake and Streambed Alteration Agreement Authorization MM WET-3: Monitoring, Maintenance, and Reporting MM WET-4: Riparian Wetland Vegetation Replanting
Change groundwater supply or groundwater recharge	None	No effect	No Effect	No Effect	None
Geology/Soils/Seismic/Topography					
Surface fault rupture	None	None	None	None	None
Strong seismic ground shaking	Adverse Effect	The new bridge would be constructed according to current design standards and would be able to withstand typical bedrock accelerations and site-specific geologic and soil conditions.	Same as Alternative 1	Same as Alternative 1	The project will be conducted in accordance with all federal, state, and local regulatory requirements.

Resource	No-Build Alternative	Alternative 1 - Camelback Through-Truss Bridge	Alternative 2 - (Recommended Preferred Alternative): Haunched Composite Welded Steel Girder Bridge	Alternative 3 - Haunched Precast-Prestressed Concrete Girder	Avoidance, Minimization, and/or Mitigation Measures
Seismic-related ground failure or other seismic hazards	Adverse Effect	The new bridge would be constructed according to current design standards and would be able to withstand typical bedrock accelerations and site-specific geologic and soil conditions.	Same as Alternative 1	Same as Alternative 1	The project will be conducted in accordance with all federal, state, and local regulatory requirements.
Located on expansive soils	Adverse Effect	The new bridge would be constructed according to current design standards and would be able to withstand site-specific soil conditions.	Same as Alternative 1	Same as Alternative 1	The project will be conducted in accordance with all federal, state, and local regulatory requirements.
Temporary construction impacts	None	The clearing of vegetation, placement of fill, and ground-disturbing excavation and grading activities would alter the existing environmental conditions, thus increasing the risk of erosion on exposed steep slopes and other disturbed areas.	Same as Alternative 1	Same as Alternative 1	AMM HYDRO-1: Erosion and Sediment Control
Paleontology					
Destruction of paleontological resources as a result of ground disturbance	None	Unlikely to encounter	Same as Alternative 1	Same as Alternative 1	AMM PALEO-1: Inadvertent Discovery of Paleontological Resources

Resource	No-Build Alternative	Alternative 1 - Camelback Through-Truss Bridge	Alternative 2 - (Recommended Preferred Alternative): Haunched Composite Welded Steel Girder Bridge	Alternative 3 - Haunched Precast-Prestressed Concrete Girder	Avoidance, Minimization, and/or Mitigation Measures
Hazardous Waste/Materials					
Create a hazard from transport of hazardous materials	No effect	Disposal of demolished bridge debris to a suitable off-site location	Same as Alternative 1	Same as Alternative 1	MM HAZ-1: Inadvertent Discovery of Hazardous Materials or Waste MM HAZ-2: Asbestos
Risk of hazardous material release	Bridge and road maintenance and other activities that may result in disturbance of soils and infrastructure could expose workers and the public through inhalation or direct contact. Left undisturbed, the potential for hazard would be low.	Lead-based paint Treated wood waste Asbestos Accidental spills of pollutants during construction	Same as Alternative 1	Same as Alternative 1	AMM HYDRO-2: Prevention of Accidental Spills MM HAZ-1: Inadvertent Discovery of Hazardous Materials or Waste MM HAZ-2: Asbestos MM HAZ-3: Lead-Based Paint MM HAZ-4: Treated Wood Waste
Effects from known hazardous material release sites	None	The Honeydew Country Store contained one known leaking underground storage tank (LUST) site that had reported soil contamination. Concentrations of benzene, toluene, ethylbenzene, and xylenes; methyl tertbutyl ether; and total petroleum hydrocarbons as gasoline were originally found in the vicinity of the LUST site.	Same as Alternative 1	Same as Alternative 1	None

Resource	No-Build Alternative	Alternative 1 - Camelback Through-Truss Bridge	Alternative 2 - (Recommended Preferred Alternative): Haunched Composite Welded Steel Girder Bridge	Alternative 3 - Haunched Precast-Prestressed Concrete Girder	Avoidance, Minimization, and/or Mitigation Measures
		Concentrations of these compounds were not detected during the Preliminary Site Investigation soil testing. The project would not disturb the known LUST site.			
Disturb contaminated soil during construction	Bridge and road maintenance and other activities that may result in disturbance of contaminated soils and could expose workers and the public through inhalation or direct contact. Left undisturbed, the potential for hazard would be low.	Soil testing did discover concentrations of lead that exceeded environmental screening levels in soil samples collected at two locations (north abutment and southwest side of existing bridge) that could be disturbed during construction.	Same as Alternative 1	Same as Alternative 1	AMM HYDRO-2: Prevention of Accidental Spills MM HAZ-1: Inadvertent Discovery of Hazardous Materials or Waste MM HAZ-3: Lead-Based Paint
Wildfire	No effect	Use of construction equipment in and around vegetated areas increases the potential for wildfires to be ignited. No increased potential for wildfire ignition by project operation.	Same as Alternative 1	Same as Alternative 1	MM HAZ-5: Wildfire Potential
Air Quality					
Conflict with applicable air plan	None	None	None	None	None

Resource	No-Build Alternative	Alternative 1 - Camelback Through-Truss Bridge	Alternative 2 - (Recommended Preferred Alternative): Haunched Composite Welded Steel Girder Bridge	Alternative 3 - Haunched Precast-Prestressed Concrete Girder	Avoidance, Minimization, and/or Mitigation Measures
Increase exposure of criteria pollutant emissions	None	No operational impacts, temporary increases in criteria pollutant emissions during construction	Same as Alternative 1	Same as Alternative 1	AMMs AIR-1 through 6: Airborne Dust AMM AIR-7: Exhaust Emissions
Noise					
Increase in noise on sensitive receptors	None	Construction activities that would generate noise above existing ambient levels would include clearing, grubbing, demolition and dismantling for the existing bridge structure, excavation, earthwork, pile-driving, concrete work, and paving. The most noise would be generated by certain construction activities such as bridge demolition activities, and if used, pile-driving. The movement of heavy trucks in and out of the project area would also generate noise during construction.	Same as Alternative 1	Same as Alternative 1	MM NOI-1: Noise
Greenhouse Gas (GHG) Emissions	No Effect	During construction, a small amount of GHG emissions would be produced; however, the project would not result in operational GHG emissions. The current regulatory or scientific information related to GHG emissions and CEQA significance would only lead	Same as Alternative 1	Same as Alternative 1	AMM GHG-1: Greenhouse Gas Emissions

Resource	No-Build Alternative	Alternative 1 - Camelback Through-Truss Bridge	Alternative 2 - (Recommended Preferred Alternative): Haunched Composite Welded Steel Girder Bridge	Alternative 3 - Haunched Precast-Prestressed Concrete Girder	Avoidance, Minimization, and/or Mitigation Measures
		to a speculative climate change determination of CEQA significance this project. The project would not increase capacity or induce growth; therefore, there would be no operational GHG emissions.			
Energy					
Inefficient, wasteful, and unnecessary consumption of energy	No Effect	No Effect	No Effect	No Effect	None
Mineral Resources					
Affect known or locally available important mineral resources	No Effect	No Effect	No Effect	No Effect	None
BIOLOGICAL ENVIRONMENT					
Biological Resources					
Impacts on sensitive natural communities	No Effect	Approximately 0.37 acre of montane riparian habitat would be temporarily affected by construction as a result of the temporary detour route, construction access, construction staging, and equipment operation in the floodplain	Same as Alternative 1	Same as Alternative 1	AMM NAT-1: Protection of Riparian Habitat

Resource	No-Build Alternative	Alternative 1 - Camelback Through-Truss Bridge	Alternative 2 - (Recommended Preferred Alternative): Haunched Composite Welded Steel Girder Bridge	Alternative 3 - Haunched Precast-Prestressed Concrete Girder	Avoidance, Minimization, and/or Mitigation Measures
Impacts on wetlands and other waters of the State	No Effect	Approximately 2.516 acres (1,634 linear feet) of temporary impacts and 0.062 acre (35 linear feet) of permanent loss of wetlands and other waters (Figure 2-11). Temporary construction impacts on 0.175 acre of riparian wetlands and 2.341 acre (1,634 linear feet) of perennial stream (i.e., Mattole River) would be due to project construction access, creation of a temporary detour and bridge, and the placement of temporary work pads. Permanent impacts would result from the placement of permanent fill for the new center bridge pier and the southern abutment into the Mattole River channel, below the ordinary high-water mark.	Same as Alternative 1	Same as Alternative 1	AMM HYDRO-1: Erosion and Sediment Control AMM HYDRO-2: Prevention of Accidental Spills AMMs AIR-1 through 6: Airborne Dust AMM AIR-7: Exhaust Emissions AMM NAT-1: Protection of Riparian Habitat MM WET-1: Section 404 and 401 Regulatory Permit Authorizations MM WET-2: Section 1600 Lake and Streambed Alteration Agreement Authorization MM WET-3: Monitoring, Maintenance, and Reporting MM WET-4: Riparian Wetland Vegetation Replanting
Impacts on plants	No Effect	Construction of the project would have no temporary or permanent impacts on special-status plant species. Construction would, however, have temporary and permanent impacts on common plant species and vegetation community types.	Same as Alternative 1	Same as Alternative 1	AMM NAT-1: Protection of Riparian Habitat AMM VIS-1: Manipulate landscape components to buffer sensitive receptors during construction. AMM VIS-2: Revegetate temporarily disturbed areas.

Resource	No-Build Alternative	Alternative 1 - Camelback Through-Truss Bridge	Alternative 2 - (Recommended Preferred Alternative): Haunched Composite Welded Steel Girder Bridge	Alternative 3 - Haunched Precast-Prestressed Concrete Girder	Avoidance, Minimization, and/or Mitigation Measures
Impacts on animals (special status)	No Effect	Potential direct and indirect effects on northern red-legged frog, foothill yellow-legged frog, western pond turtle, special-status and migratory birds and raptors, pallid bat, ring-tailed cat, and Sonoma tree vole during construction. No operational effects on these species.	Same as Alternative 1	Same as Alternative 1	AMM HYDRO-1: Erosion and Sediment Control AMM HYDRO-2: Prevention of Accidental Spills AMM NAT-1: Protection of Riparian Habitat AMM VIS-1: Manipulate landscape components to buffer sensitive receptors during construction. AMM VIS-2: Revegetate temporarily disturbed areas. MM BIO-1: Project Footprint MM BIO-2: Special-Status and Migratory Birds and Raptors MM BIO-3: Pallid Bat MM BIO-4: Ring-tailed Cat
Impacts on threatened and endangered species	No Effect	Potential direct and indirect effects on Southern Oregon/Northern California coast evolutionarily significant unit coho salmon, California coastal Chinook salmon, Northern California distinct population segment steelhead, (including the summer-run population) marbled murrelet, and northern spotted owl during construction. No operational effects on these species. Essential Fish Habitat (EFH): The project would temporarily affect some	Same as Alternative 1	Same as Alternative 1	AMM HYDRO-1: Erosion and Sediment Control AMM HYDRO-2: Prevention of Accidental Spills AMM NAT-1: Protection of Riparian Habitat AMM VIS-2: Revegetate temporarily disturbed areas MM BIO-1: Project Footprint MM TES-1: Northern Spotted Owl and Marbled Murrelet MM TES-2: Anadromous Fishes and Fish Habitat

Resource	No-Build Alternative	Alternative 1 - Camelback Through-Truss Bridge	Alternative 2 - (Recommended Preferred Alternative): Haunched Composite Welded Steel Girder Bridge	Alternative 3 - Haunched Precast-Prestressed Concrete Girder	Avoidance, Minimization, and/or Mitigation Measures
		principal physical or biological features of critical habitat and elements of EFH; however, the project was designed to minimize adverse effects on this habitat.			
Invasive species	No Effect	Construction would disturb invasive plant species such as Himalayan blackberry and French broom found along existing roads and in work areas. The movement of construction equipment into and throughout the project area could aide in the dispersal of seeds and plant material, potentially transferring them to disturbed areas, which are typically susceptible to colonization or spread by invasive plants. Operational impacts would be consistent with existing conditions.	Same as Alternative 1	Same as Alternative 1	AMM INV-1: Invasive Species

Notes: For a complete description of potential adverse effects, including temporary and permanent construction and operational effects, and recommended avoidance and minimization measures and mitigation measures, please refer to Chapter 2, and Impacts included in this table are described in detail in chapters 2 and 3 of this Environmental Impact Report/Environmental Assessment.

Permits and Approvals

Table S-3 includes the permits, reviews, and approvals anticipated to be required for project construction. There are no unresolved areas of controversy with agencies having a stake in the project.

Table S-3. Permits, Reviews, and Approvals Anticipated to be Required for Project Construction

Agency	Permit/Approval	Status
National Marine Fisheries Service (NMFS)	Endangered Species Act, Section 7 Biological Opinion	A Biological Opinion issued on October 16, 2020, by NMFS concurred with the Biological Assessment/EFH that the project would adversely affect the EFH of Pacific Coast salmon.
U.S. Army Corps of Engineers	Clean Water Act Section 404	Permit application will be submitted after the environmental document is approved.
California Department of Fish and Wildlife	1602 Agreement for Streambed Alteration California Endangered Species Act Consultation	Permit application and consultation will be submitted and initiated after the environmental document is approved.
Regional Water Quality Control Board	Clean Water Act Section 401	Permit application will be submitted after the environmental document is approved.
California Department of Transportation	Section 4(f) Approval	Draft Section 4(f) Evaluation was circulated at the same time as the environmental document and no comments were received.
State Historic Preservation Officer	Memorandum of Agreement (MOA) Concurrence with Finding of Effects	The MOA was executed January 18, 2019, following the completion of Section 106 consultation. An amended MOA was adopted on August 5, 2021, to address minor changes to the APE.
State Lands Commission	General Lease Permit	Permit application will be submitted after the environmental document is approved.

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List of Abbreviated Terms

AASHTO	American Association of State Highway and Transportation Officials
AB	Assembly Bill
ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing materials
ACS	American Community Survey
ADL	aerially deposited lead
ADT	average daily traffic
AMM	avoidance and minimization measure
APE	area of potential effect
APN	assessor parcel number
ARB	Air Resources Board
BA/EFHA	Biological Assessment/Essential Fish Habitat Assessment
bgs	below ground surface
BMP	best management practice
BSA	biological study area
BTEX	benzene, toluene, ethylbenzene, and xylenes
CAAQS	California ambient air quality standards
CAFE	Corporate Average Fuel Economy
CAL FIRE	California Department of Forestry and Fire Protection
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CC	California coastal
CCR	California Code of Regulations
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH_4	methane
CIDH	cast-in-drilled-hole
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
County	Humboldt County Public Works Department
CRHR	California Register of Historical Resources
CTP	California Transportation Plan
CTP	California Transportation Plan
CWA	Clean Water Act
dB	decibel
DPM	diesel particulate matter
DPS	Distinct Population Segment
EA	Environmental Assessment
EFH	essential fish habitat
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EO	Executive Order

ESLs	environmental screening levels
ESU	Evolutionarily Significant Unit
FCAA	Federal Clean Air Act
FEMA	Federal Emergency Management Agency
FESA	federal Endangered Species Act
FHWA	Federal Highway Administration
FTIP	Federal Transportation Improvement Program
GHG	greenhouse gas emissions
H&SC	Health and Safety Code
H_2S	hydrogen sulfide
HCAOG	Humboldt County Association of Governments
HFCs	hydrofluorocarbons
HPSR	Historic Property Survey Report
ISA	Initial Site Assessment
JRP	JRP Historical Consulting
KOP	key observation point
LBP	lead-based paint
LEDPA	least environmentally damaging practicable alternative
LUST	leaking underground storage tank
LWA	Leopardo Wildlife Associates
MBGR	metal beam guard rail
MBTA	Migratory Bird Treaty Act
mg/kg	milligrams per kilogram
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
MOA	memorandum of agreement
MSAT	mobile source air toxics
msl	above mean sea level
MTBE	methyl tertbutyl ether
N_2O	nitrous oxide
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NCAB	North Coast Air Basin
Air District	North Coast Unified Air Quality Management District
NEPA	National Environmental Policy Act
NES	natural environment study
NESHAP	National Emission Standard for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOA	naturally occurring asbestos
NOP	Notice of Preparation
NOx	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O_3	ozone
OHP	Office of Historic Preservation
OHWM	ordinary high-water mark
ORV	Outstanding Remarkable Value
PA	Programmatic Agreement

Pb	lead
PG&E	Pacific Gas and Electric Company
PM	particulate matter
PM_{10}	particles of 10 micrometers and smaller
$PM_{2.5}$	particles of 2.5 micrometers and smaller
ppm	parts per million
PRC	California Public Resources Code
project	proposed Honeydew Bridge Replacement Project
PSI	Preliminary Site Investigation
RAP	Relocation Assistance Program
RCRA	Resource Conservation and Recovery Act
Regional Board	Regional Water Quality Control Board
ROG	reactive organic gases
RSA	resources study area
RSP	rock slope protection
RTP	Regional Transportation Plan
SB	Senate Bill
SCS	Sustainable Communities Strategy
SF_6	sulfur hexafluoride
SHPO	California State Historic Preservation Officer
SIP	State Implementation Plan
SLC	State Lands Commission
SO_2	sulfur dioxide
SONCC	southern Oregon/northern California coasts
Stantec	Stantec Environmental Consulting Inc.
SWPPP	Storm Water Pollution Protection Plan
SWRCB	State Water Resources Control Board
TDM	transportation demand management
THPO	Tribal Historic Preservation Officer
TMDL	Total Maximum Daily Load
TMP	traffic management plan
TPH	total petroleum hydrocarbons
TPH-d	total petroleum hydrocarbons as diesel
TPH-g	total petroleum hydrocarbons as gasoline
TSCA	Toxic Substances Control Act
TSM	transportation system management
USACE	United States Army Corps of Engineers
USC	United States Code
USCB	United States Census Bureau
USDOT	United States Department of Transportation
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
VAU	visual assessment unit
VIA	Visual Impact Assessment
VMT	vehicle miles traveled
VOC	volatile organic compound
WDR	Waste Discharge Requirement
$\mu g/m^3$	micrograms per cubic meter

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Chapter 1. Proposed Project

1.1. Introduction

Humboldt County Public Works Department (County) is the lead agency under the California Environmental Quality Act (CEQA) for the proposed Honeydew Bridge Replacement Project (project), as assigned by the Federal Highway Administration (FHWA). California Department of Transportation (Caltrans) is the lead agency under the National Environmental Policy Act (NEPA). Honeydew Bridge is on Mattole Road at the Mattole River in the community of Honeydew in unincorporated southwestern Humboldt County. The existing bridge is just north of the intersection of Mattole Road and Wilder Ridge Road. Honeydew Bridge was built in 1920 by Humboldt County and was repaired in 1975. The existing bridge serves as a vital regional crossing of the Mattole River for the community of Honeydew and surrounding areas.

The project is identified in the Humboldt County Association of Governments (HCAOG) 2017 *Semi-Final Draft of the Regional Transportation Plan*. This Regional Transportation Plan (RTP) includes the Honeydew Bridge Replacement Project funded by the Highway Bridge Program. The project was first identified in the *1985 Humboldt County General Plan* (Humboldt County 1985) as a minor amendment revising the Framework Plan Public Facility Map to include a new bridge crossing for the Mattole River in the Honeydew area.

1.2. Project Location

The 28.10-acre project area is defined by the extents of the project construction limits and includes the temporary work area, contractor staging locations, the temporary detour alignment, local road segments (Wilder Ridge Road, Mattole Road, Burrell Road), and the Honeydew Bridge itself. The project area is centered on Honeydew Bridge and a reach of the Mattole River, and the bank and uplands on either side of the river. It is shown on the *Honeydew* and *Shubrick Peak*, *California* U.S. Geological Survey (USGS) quadrangle in Townships 2 and 3S, Range 1W, Sections 1 and 36 (Figure S-1). The approximate center of the study area is at latitude 40.244210, longitude -124.124925 (World Geodetic System 1984). Resources assessed in this DEIR/EA are limited to the defined project study area unless otherwise noted in the focused resource discussion.

If traveling from the north, take Highway 101 south through Redcrest, then travel west on Mattole Road for 23 miles to Honeydew Bridge near the intersection of Wilder Ridge Road and Mattole Road.

If travelling from the south, take 101 north to Redway by way of Redwood Drive. Travel west on Briceland Thom Road for 10 miles, then turn right on Ettersburg Road for 6 miles. Ettersburg Road turns into Wilder Ridge Road, which runs 13.5 miles to Honeydew Bridge.

1.3. Purpose and Need

1.3.1. PROJECT PURPOSE

The purpose of the project is to improve an existing but obsolete regional road crossing over the Mattole River so that it meets modern highway design standards, accommodates local and regional transportation needs, and provides a safe route for vehicles, pedestrians, and bicyclists.

1.3.2. PROJECT NEED

The project need stems from a 1997 resolution passed by the County Board of Supervisors stating the need for a bridge replacement. This resolution was based on the finding from a Caltrans Structure Maintenance inspection, which identified a low sufficiency rating. The existing bridge is near the end of its service life and is considered structurally deficient. It does not comply with modern geometric and seismic standards. The bridge consists of only one travel lane, lacks a standard shoulder width, and does not provide safe passage for pedestrians and bicyclists.

Subsequent Caltrans structure maintenance investigations performed in 2014 confirmed the previously identified structural deficiencies and an additional determination of “functionally obsolete” due to factors including height, weight, and width limitations. The bridge’s low clearance height of 14 feet limits access to critically needed fire vehicles and heavy equipment, including road repair equipment that is needed to repair and reopen rural roads in the region damaged during the winter or following unseasonable severe storms and disasters. The low vertical clearance has also led to a series of incidents in which large vehicles hit and damaged the truss structure. The inspection generates a rating as a method for evaluating a bridge’s overall fitness for the duty that it performs. The rating is based on a scale of 1 to 100, with 1 being the least fit. The Honeydew Bridge received a score of 13.3. Rehabilitation of the existing bridge to meet modern geometric and seismic standards would be both technically infeasible and cost prohibitive.

Current average daily traffic (ADT) numbers counted in 2017 are approximately 289 on the weekend and roughly 380 during weekdays, for a weekly average of 353 (Foster pers. comm. 2021). Assuming an annual traffic growth rate of 2.0 percent, the ADT would be approximately 405 in 2024 (this is the first year of the proposed 2-year construction period for the new bridge). These numbers are expected to increase to about 603 in 2044, which reflects the project’s 20-year design period (as defined in Section 103.2 in Caltrans’ Highway Design Manual [2020]). This level of use for a one-lane bridge contributes to the unsafe nature of the bridge. The existing bridge provides no pedestrian access—pedestrians and bicyclists must use the narrow, uneven traffic lane when crossing over the river. These crossing conditions pose safety concerns for both pedestrians and bicyclists.

A recent accident report review conducted by the County (Bundschuh pers. comm. 2021) found 15 accidents at or near the bridge in the last 15 years. It is likely, however, that minor accidents are typically not reported due to the remote location.

1.4. Independent Utility and Logical Termini

This project connects at logical termini and is of sufficient length to address environmental matters on a broad scope. Logical termini for a project are defined as rational end points for transportation improvements. These rational end points should facilitate a thorough review of environmental effects. A project will have independent utility if its improvements are usable and constitute a reasonable expenditure even if no additional transportation improvements are made.

FHWA regulations (23 Code of Federal Regulations [CFR] 771.111 [f]) require that the action evaluated (i.e., project) must do the following:

1. Connect logical termini and be of sufficient length to address environmental matters on a broad scope.

2. Have independent utility or independent significance (be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made).

3. Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

End points on Mattole Road, one 200 feet west and one 200 feet east of the Mattole River, are rational end points because the project would be contained within these limits, with the exception of the temporary detour road. The project would have independent utility because it would not be dependent on any additional transportation improvements outside of the project area. It would be a usable and reasonable expenditure, and a substantial public benefit independent of other transportation projects, while also being a potential benefit to future regional transportation projects.

1.5. Project Description

The project would occur in the rural community of Honeydew in unincorporated southwestern Humboldt County. The existing Honeydew Bridge on Mattole Road is a vital regional crossing of the Mattole River for the community of Honeydew and surrounding areas. The total 28.10-acre project area includes a reach of the Mattole River, the bridge, and the bank and uplands on either side of the river. Originally built in 1920 and repaired in 1975, the existing bridge was determined by Caltrans to be near the end of its service life and is considered structurally deficient. It does not comply with modern geometric and seismic standards. The bridge consists of only one travel lane, lacks a standard shoulder width, and does not provide safe passage for pedestrians and bicyclists. The purpose of the project is to provide a regional road crossing over the Mattole River that meets modern highway design standards,

The project contains standardized project measures that are employed on most, if not all, Caltrans projects and were not developed in response to any specific environmental impact resulting from the project. These measures are addressed in more detail in the Environmental Consequences sections found in Chapter 2.

This section describes the project and the project alternatives developed to meet the purpose and need of the project, while avoiding or minimizing environmental impacts. Three build alternatives and the No-Build Alternative are under consideration as described in the following subsections. Figure 1-1 shows the existing bridge (i.e., No-Build Alternative). Figure 1-2, Figure 1-3, and Figure 1-4 show the alternative designs. Table S-1 presents a summary comparison of the alternative features.

1.5.1. PROPOSED PROJECT ALTERNATIVES

NO-BUILD ALTERNATIVE

Under the No-Build Alternative, the existing bridge would remain in its current substandard state. Use of the bridge would continue while traffic volumes increase; however, its structural limitations may increase the bridge's potential for catastrophic failure (i.e., collapse) because it does not meet modern safety standards. It would continue to be a barrier to large emergency response vehicles and other large trucks due to its height, weight, and width limitations. Because transportation routes and access in this part of southern Humboldt County are limited by topography, the No-Build Alternative would maintain the existing public safety hazard and continue to hinder traffic circulation. The No-Build Alternative would not meet the purpose and need for the project. Figure 1-1 shows the existing bridge profile.

PROJECT BUILD ALTERNATIVES

Three project build alternatives were considered to meet the project's purpose and need. All three build alternatives would follow the same existing roadway approach and bridge alignment. Common design features would be incorporated into each build alternative, differing only in construction timing:

- A few unique construction activities tied to the structure type
- The new bridge's final freeboard clearance, which is also a function of structure type
- Visual appearance and aesthetic

Figure 1-2, Figure 1-3, and Figure 1-4 illustrate the anticipated appearance of the completed bridge designs proposed in Alternatives 1 through 3, respectively.

The following three project build alternatives were carried forward for analysis in compliance with CEQA and as recommended under NEPA:

- Alternative 1 - Camelback Bridge. This alternative would be the most similar in appearance to the existing bridge.

- Alternative 2 - Steel Girder Bridge. This is the recommended Preferred Alternative.

- Alternative 3 - Concrete Girder Bridge. (This alternative would be a precast-prestressed, haunched, spliced girder bridge.)

1.5.2. COMMON DESIGN FEATURES OF THE PROJECT BUILD ALTERNATIVES

DESIGN

The replacement bridge would be designed for the HL93, Tandem, and P15 Permit Design Vehicle loadings as specified in Caltrans Bridge Design Specifications within the current Seismic Design Criteria Version 1.6 and American Association of State Highway and Transportation Officials (AASHTO) 6th Edition (Caltrans 2010). The structure must be capable of conveying the base or 100-year flood and passing the 50-year flood without causing objectionable backwater or excessive flow velocities or encroaching on through-traffic lanes, according to the Hydraulic Design Criteria established in the *Caltrans Local Assistance Procedures Manual* (Caltrans 2018). In addition, AASHTO requires at least 3 feet of freeboard (clearance) above the level of the 50-year flood or flood of record. According to the project's hydrologic analysis (Pacific Hydrologic 2020) the minimum soffit elevation required to meet these criteria is 335.41 feet above mean sea level (msl).

Each of the build alternatives would replace the existing single-lane camelback through-truss bridge with a new two-lane bridge over the Mattole River in the same alignment. The new bridge pier centerline would be located 11 feet north of the existing pier centerline. The replacement structure would include two 11-foot-wide lanes, each having 2-foot-wide bridge rails and 3-foot shoulders for a total width of 32 feet. The replacement bridge would consist of two equal spans, each 187 feet 7.5 inches long, for a total bridge length of 375 feet 2 inches. A central pier (Pier 2) would be the only permanent structure required below the ordinary high-water mark (OHWM) in the active river channel. The new bridge abutments and central pier would be founded on steel H-piles and cast-in-drilled-hole (CIDH) piles.

The roadway approaches on both ends of the new bridge would be widened to accommodate two 12-foot-wide lanes, 4-foot-wide shoulders, and 3-foot-wide unpaved shoulders; however, the bridge structure itself would be slightly narrower—two 11-foot-wide lanes, each having 2-foot-wide bridge rails and 3-foot shoulders. A total of four shortened metal beam guard rails (MBGRs), 50 to 100 feet long, would be added along Mattole Road on both sides of the bridge. One MBGR would be added between the Honeydew Country Store/Post Office parking lot and Mattole Road near the southwest bridge corner. Near the southeast bridge corner, an MBGR would be added between the adjacent residence and Mattole Road to protect the residence and existing trees. On the north side of the bridge, MBGR would be installed on both sides of the road, between Mattole Road and the riparian vegetation along the riverbanks. New signage would be added on the north and south bridge approaches.

Regardless of the selected build alternative, a small interpretive area would be created near the northwest corner of the new bridge alignment near the Mattole Road and Burrell Road intersection to commemorate the historical significance of the existing Honeydew Bridge. It is anticipated that this area would include a monument marker (a plaque) that would be placed in a pullout located within existing County right of way.

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Stantec

Honeydew Bridge Replacement Project

Figure 1-1
Existing Honeydew Bridge (No-Build Alternative)

STEEL TRUSS - ALTERNATIVE 1

Figure 1-2

Honeydew Bridge Replacement
County of Humboldt Public Works

Morrison Structures, Inc.
Redding, California

COMPOSITE WELDED GIRDER - ALTERNATIVE 2

Figure 1-3

Honeydew Bridge Replacement
County of Humboldt Public Works

Morrison Structures, Inc.
Redding, California

PRECAST PRESTRESSED CONCRETE SPLICED GIRDER - ALTERNATIVE 3

Honeydew Bridge Replacement
County of Humboldt Public Works

Figure 1-4

MORRISON STRUCTURES, INC.
REDDING, CALIFORNIA

CONSTRUCTION

Construction Methods

Construction specifications will be in accordance with the Special Provisions and the current Caltrans Standard Plans, Standard Specifications, and Standard Special Provisions at the time the construction contract is awarded.

Construction Sequencing

Construction is anticipated to take 2 years. The first season work would include the following:

- Construction of a detour road and temporary river crossing to be located downstream of the bridge
- Construction of a temporary gravel work pad on the south riverbank
- Construction of the pier foundations, pile cap, and pier (Pier 2)
- Construction of the south abutment (Abutment 3)
- Construction of the north abutment pile foundation (Abutment 1)
- Removal of the detour road and temporary river crossing downstream of the bridge
- Removal of the temporary gravel work pad on the south riverbank

The second season work would include the following:

- Construction of a detour road and temporary river crossing to be located downstream of the bridge
- Construction of a temporary gravel work pad on the south riverbank
- Removal of the existing bridge structure
- Construction of a temporary gravel work pad on the north riverbank
- Construction of the north abutment (Abutment 1), bridge superstructure, and approach roadways
- Removal of the temporary gravel pads on the north and south riverbanks
- Removal of the temporary detour road and river crossing

Because of the short period of low flows for the Mattole River, during which construction can occur, two summer seasons would be required to construct the bridge replacement project regardless of the structure type alternative selected. The first season of work would involve construction of the deep foundations required for the new bridge's center pier. During this period, access would occur either via a private road that descends to the floodplain from Wilder Ridge Road near the southeast corner of the bridge, or via a downstream temporary detour road (a portion of the larger temporary detour road that would be required for construction access during the second season).

The second season of work would involve constructing the remainder of the temporary downstream detour; dismantling and removal of the existing bridge; and constructing the pier wall, abutments, retaining walls, superstructure, and roadway approaches. After completion of the second season of work, the detour bridge and roadbed surfacing material from the detour

road, construction access road, and private access road would be removed and the areas of temporary disturbance would be restored to pre-construction conditions.

The seasonal construction period for work within the wetted channel would generally be limited to June 15 through October 15. However, the County may request, in consultation with Caltrans, National Marine Fisheries Service (NMFS) and California Department of Fish and Wildlife (CDFW) to extend this in-water work period by a few weeks earlier or later in the season for certain activities, provided that environmental conditions and agency approvals may accommodate such an extension of the in-water work to expedite construction completion schedules. Although Abutment 1 would be a land-based foundation placed more than 60 feet from the river channel, if the driven H-pile option is selected by the Contractor, then pile-driving would be restricted to the June 15 through October 15 period to minimize the potential for impacts on fish.

Through-traffic flow would be maintained throughout the project construction period. During the first season, traffic routing would continue to be over the existing bridge. In the second season, traffic would be routed to the temporary detour.

Right of Way and Construction Easements

Retaining walls would be needed at the south end of the project area (near the residence on the east side of the Wilder Ridge Road and Mattole Road intersection and near the store on the west side of the intersection) to keep the fill slopes within the right of way. Construction of these walls would require temporary construction easements to allow for construction access.

On the north end of the bridge, specifically the northwest corner, roadway approach construction would require acquisition of permanent right of way and temporary construction easements because the existing road was determined to be outside of the existing right of way. A cut slope would be needed outside of the existing right of way on the east side of Mattole Road from station 12+00 to station 12+75. Temporary construction easements for the detour and for the construction access road would also be required.

Foundation System and Dewatering Activities

The new bridge abutments and central pier would be founded on steel H-piles and CIDH piles (see Appendix B for design plan detail). Abutment 1 (north bridge abutment) would consist of a foundation of thirteen 10-inch steel H-piles impact driven about 45 feet deep or two 60-inch CIDH piles. Pier 2 (the central bridge pier) would be on a foundation consisting of two 84-inch-diameter CIDH piles. Abutment 3 (south bridge abutment) would be built on a foundation consisting of two 60-inch CIDH piles. Installation of temporary sheet piles may be required for shoring the construction areas surrounding the central pier and the Abutment 3 foundations. Vibratory pile-driving would be used for installing shoring sheet piles surrounding these features. Drilling fluids and slurries for the CIDH pile installation would be contained to prevent contamination of surface water and groundwater and would be properly disposed of outside of the riverbed and banks in accordance with typical Caltrans Standard Specifications, which would be used by the County during construction. Additionally, the foundation system and

dewatering activities would be supported by a Contractor-provided material handling and disposal plan.

Adequate dewatering at the pier location during construction would be achieved by means of diking/diversion of surface water and sump pumping. A technical work plan will be prepared by the Contractor and submitted to Caltrans and NMFS for approval before any dewatering or diversion activities.

Fill Import and Export

Imported embankment material would be required for the approach roadway at the south end of the bridge. This fill would be placed outside of the OHWM of the Mattole River channel. The contractor will provide temporary water pollution control measures, including but not limited to dikes, basins, and ditches, which may become necessary because of the construction process.

Work Pads and Shoring Tower

Removal of the existing bridge and construction of the new bridge would require the construction of gravel work pads that extend into the wetted channel to allow access for large equipment (e.g., cranes). All work in the wetted river channel would be scheduled during the summer base flow season. Before construction of gravel work pads, areas within the wetted channel would be temporarily isolated using water bladders, K-rails, and turbidity curtains, cleared of fish, and closed off to control turbidity during installation of temporary sheet piles to retain fill and gravels would be pushed into the contained work pad area.

For the north span (Span 1) bridge removal, a temporary gravel work pad would be installed on the south bank of the river and on the north side of Pier 2. The gravel work pad would be retained on the river side by the installation of temporary sheet piles vibrated into place for shoring. It is anticipated that precast concrete dead man anchors and tie-back rod anchors would be used to provide additional lateral support for the upper section of the sheet piles. A large capacity crane would be placed on the gravel work pad for removal of the existing Span 1 truss. Estimates for size, number, and location of sheet piles are based on preliminary design and reasonable construction assumptions; the exact scheduling and methods of construction activities would be determined by the contractor, in coordination and consultation with the County, Caltrans, and NMFS.

Following removal of the existing bridge, an additional temporary gravel work pad would be constructed on the north bank of the river. Materials and small equipment needed for construction of this gravel work pad would be lowered to the area from Abutment 1 by a crane. The gravel work pad would be retained on the river side by the installation of temporary gabion walls (wire gabion baskets would be covered in heavy plastic to prevent entanglement of wildlife), or other suitable temporary gravity wall types with spread footings. This retaining system is needed due to the presence of large boulders and undulating exposed rock near the river's edge. Once the gravel pad is complete, a temporary shoring tower would be constructed to facilitate bridge girder installation. A crane at the Abutment 1 location would place the new steel plate girder segments that span from Abutment 1 to the north side shoring tower. The river opening between the retained gravel pads would be about 80 feet wide. This design would

accommodate a maximum flow conveyance of 8,900 cubic feet per second (cfs) at a flow velocity of 8 feet per second.

Vibratory pile-driving would be used for installing shoring sheet piles. Pile-driving would be accomplished using a crane with a vibratory hammer and an impact hammer to drive pilings into the ground. Vibratory pile-driving would be used where geological conditions allow and would be the only pile-driving method used before July 1, when allowed. It is anticipated that for steel piling an average of 120 strikes per pile would be needed for an impact hammer to drive each pile. It is assumed that an average of six piles per day would be installed.

Gravel approach pads would consist of 1- to 4-inch-diameter uncrushed, washed (silt free), river-run (rounded) rock (i.e., spawning gravel), following U.S. Fish and Wildlife Service (USFWS) recommendations shown in Table 1-1, so these materials can be contoured and left within the flood-prone channel to augment coarse sediment and fish habitat after construction. Super-sacks filled with larger rock, similar to that currently found in the river, would typically be placed in the lower toe portion of the gravel approach pads, if needed, to resist high-velocity river flows. Other slope protection measures, such as concrete K-rails, could also be used to prevent pad toe erosion within the river. The gravel approach pads at both the north bank and Pier 2 would vary in height, with a maximum height of about 12 feet at Pier 2. For the north bank gravel pad, it is estimated that 15 cubic yards of gravel would be placed below the OHWM elevation (elevation 313 feet msl) over an approximate length of 60 feet along the river. For the Pier 2 gravel pad, it is estimated that about 350 cubic yards of gravel would be placed below the OHWM elevation over an approximate length of 160 feet along the river. The material used as fish rock for the temporary features would follow the size criteria identified in Table 1-1.

Table 1-1. Size Criteria for Spawning-Sized Gravel - Fish Rock for Constructing the Temporary Detour and Work Pads in the Mattole River

Particle Size (inches)	Percent Passing	Percent Retained
5	95–100	0–5
2	70–85	15–30
1	40–50	50–60
3/4	25–35	65–75
1/2	10–20	80–90
1/4	0–5	95–100

Placement of gravel for work pads is assumed to take up to a total of 5 days. Placement of the clean gravel approaches would be employed slowly from the top of the banks, working outward into the live river channel, and turbidity will be monitored to ensure the turbidity increase does not exceed water quality thresholds. If needed to contain the fill and prevent erosion, super-sacks or similar barriers would first be slowly lowered into place along the toe area of the approach fill, providing for fish removal and or exclusion from the work area. Then, clean gravel would be placed between the shore and the erosion/containment barriers. The clean gravel would be placed gradually from along the edge of the river out until a pad is formed.

The gravel work pads would remain in the river only as long as needed, but no more than the duration of the second summer construction and would then be removed. The pads would be monitored during the duration of construction to ensure that the gravels are not displaced. It is anticipated that they would only be installed and used in the second season for dismantling the existing bridge and constructing the new bridge.

Temporary supports would also be needed to remove the existing south span truss bridge and to erect the new steel bridge girders for the south span. These supports would likely consist of standard timber and steel support bents founded on timber pads (soil pads) on the existing flood plain gravel bar above the OHWM elevation. Appendix B depicts the supports along the south span gravel bar for the removal of the existing bridge and erection of the new bridge girders.

Because fish rock does not stay together under pressure of heavy equipment, clean, crushed, angular gravel would be placed on top of the fish rock with geotextile fabric separating the crushed, angular gravels from the fish rock. Once the new bridge is completed, the crushed rock atop the gravel work pads and temporary detour would be removed and disposed of at a suitable off-site location. Areas temporarily affected by construction would be returned to their pre-construction condition.

Appendix B shows the bridge and temporary detour schematic plans, including typical cross sections of the project's 30 percent design features. Appendix C includes the bridge and detour construction sheet pile information packet.

Bank Stabilization

Method B placement of rock slope protection (RSP) consisting of 1/4- to 1/2-ton size class rock would be used as necessary to stabilize the banks of the riparian corridor disturbed during project construction. RSP would be installed using an excavator with a bucket/thumb attachment. The addition of RSP would be in locations to supplement existing RSP, mostly near the new bridge abutments. None of the RSP would be placed below the OHWM elevation.

Concrete Deck Pour and Preparation

The concrete deck of the new bridge would be poured once the steel girders are in place. Corrugated metal deck pans/forms would be placed on the new girders and would contain the concrete. In addition, within the active river flow area, a cloth hammock would be suspended (via ropes) under the pans/forms to catch any concrete in the event it spills over the pans/forms. Based on the experience and observations of the project's bridge engineer, however, the potential for a spill is low. A concrete truck would pump concrete into the pans/forms. The concrete pump truck would adhere to the Storm Water Pollution Protection Plan (SWPPP) to minimize potential for spills. Once the concrete is poured, wet rugs would be placed over the concrete to avoid having it set up too quickly. Water may be sprayed on the rugs to keep them moist. The water would be contained to the top of deck area and would be applied in quantity only enough to keep the rugs moist. Water will either be trucked in or drafted from the Mattole River gravel bar via an infiltration gallery that would be authorized through regulatory permits. The feasibility of drafting water from the Mattole River would depend on summer low-flow volumes and drought conditions at the time of construction. Drafting might not be allowed due to

environmental conditions. Water drafting will adhere to the Water Drafting Specifications identified by NMFS and authorized by regulatory permitting agencies (i.e., Corps, Regional Water Quality Control Board [Regional Board], and CDFW)

Permitting agencies' specifications for the concrete pour containment requirements would be provided to the contractor along with spill prevention measure requirements. The specific containment plan would be developed by the contractor and approved by the County's Resident Engineer. Approximately 5 days would be required to set the deck forms and reinforcing steel. The concrete pour for the bridge decking is expected to require 2 days, with 10 days required for the concrete to completely set. Deck finishing equipment (smoothers) would be used to provide the desired finish on the deck concrete.

Detour

Each build alternative would require the use of a detour bridge approximately 1,600 feet downstream from the existing bridge. During the second construction season, a temporary detour route would be constructed by creating a connection between Burrel Road on the north side of the river and Mattole Road on the south side, bypassing the existing bridge and the Mattole Road/Wilder Ridge Road intersection. The temporary detour route would follow Burrel Road west for approximately 1,600 feet from its intersection with Mattole Road on the north side of the Mattole River, where the detour would turn south, crossing over the river via a temporary low-water crossing bridge. The temporary single-span detour bridge would be about 100 feet long and about 18 feet wide (16-foot clear width), with supporting cast-in-place concrete spread footings on the gravel approach behind the sheet pile retaining system. The river opening between the sheet pile-retained roadway approaches would be about 77 feet wide. This design would accommodate a maximum flow conveyance of 8,900 cfs at a flow velocity of 8 feet per second.

The temporary detour bridge (and/or pilings) would be in place for two construction seasons. At the end of the first construction season, the deck of the temporary detour bridge and approach fills would be removed. In the second construction season, the short gravel approach fills and detour bridge would be reinstalled on the pile bents at initiation of the season. At the end of the second construction season the entire detour bridge, including the gravel fills, would be removed.

Within the river floodway, the gravel detour approach roads would consist of 1-inch to 4-inch-diameter uncrushed, washed (silt free), river-run (rounded) rock (i.e., spawning gravel) (Table 1-1), topped with 12 inches of aggregate base. Approaches and abutments for the detour bridge may be constructed by excavating and grading the existing gravel bar and compacting local gravels using heavy equipment and water, or if deemed necessary to strengthen the detour road base, river run gravel fill over geotextile fabric, with an aggregate base topping would be used. A temporary sheet pile shoring system would be installed in the same manner as described for the gravel work pads by vibrating in piles and using precast concrete dead man anchors and tie-back rod anchors to provide additional lateral support for the upper section of the sheet piles.

This operation will be continuously monitored by a biological monitor. A diversion and water quality monitoring plan will be provided to the County, Caltrans, and permitting agencies by the Contractor. Approaches and abutments for the detour bridge may be constructed by excavating and grading the existing gravel bar and compacting local gravels using heavy equipment and water; or if deemed necessary to strengthen the detour road base, river-run gravel fill over geotextile fabric with an aggregate base topping would be used. Water for fill compaction and dust control would be extracted from a pit excavated to groundwater in the gravel bar on-site at least 50 feet away from the wetted river channel.

The gravel approach roads at both the north bank and south bank would vary in height with a maximum height of about 15 feet near the south riverbank bluff. For the north bank gravel approach road, it is estimated that 200 cubic yards of gravel would be placed below the OHWM elevation (311 feet msl) over an approximate length of 50 feet along the river. For the south bank gravel approach road, it is estimated that about 670 cubic yards of gravel would be placed below the OHWM elevation over an approximate length of 70 feet along the river. Native gravels from the project area's Mattole River gravel bar would be used to the extent possible; however, it is anticipated that imported gravels would be needed to complete the southern bridge approach. Imported fill would meet Caltrans' Standard Specifications for cleanliness and size. If any angular rock is used, it would be separated from "fish rock" and removed from the channel at the end of the first construction season. Imported gravels would be stockpiled outside of the OHWM for use during the second year of construction. Angular gravels would be removed when the road is no longer needed for construction.

Placement of gravel in the channel for both approaches is expected to take a total of 10 days over the project time period (two construction seasons). In the beginning of the first season, placement of gravel fills in the channel is expected to require 5 days, and constructing the single-span bridge for the river crossing is expected to take about 5 days, for a total of 10 days. Removal of the superstructure and gravel fills at the end of the first construction season is anticipated to take 5 days. This process would be repeated in the second season.

The south end of the temporary bridge would join an existing, unnamed gravel road on the south side of the river. This unnamed gravel road connects to Mattole Road approximately 900 feet west of the Honeydew Store and is used to access a gravel storage area and the river. Detour road construction would consist of river-run gravel fill over geotextile fabric, with an aggregate base topping. Grading in the floodplain would be needed to create the temporary detour. The existing bridge would not be accessible to the public while the temporary detour was in place. Upon completion of the new bridge, the temporary detour, including the detour bridge and approaches, would be removed and the floodplain would be restored to pre-construction conditions. Figure S-2 shows the location of the proposed temporary detour in the project area.

Staging

Temporary contractor staging would be provided at four locations (Figure S-2):

- East side of Wilder Ridge Road approximately 300 feet south of its intersection with Mattole Road. This area is immediately adjacent to the road and is used for vehicle parking by area residents. Contractor access would be directly from Wilder Ridge Road.

- Southern floodplain west (downstream) of the existing bridge. This area would be the primary construction staging area for the project. The area is in the floodplain but is away from the active low-flow channel of the Mattole River. Contractor access would be via an existing private road that extends from Wilder Ridge Road (approximately 130 feet south of its intersection with Mattole Road) into the Mattole River floodplain. Construction traffic would pass beneath the south end of the existing bridge to reach this downstream location. Alternative access to this area would be from the downstream temporary detour route.

- Southern floodplain immediately east (upstream) of the existing bridge. This site would be immediately adjacent to the east side of the existing bridge. This area is in the floodplain. Access would be similar to that in the above description but would not require passage under the existing bridge.

- An existing gravel storage area on the south side of the river, north of Mattole Road. This area is in uplands in a previously disturbed area. Access would be from Mattole Road approximately 900 feet west of the Honeydew Store.

Transportation Access

The preferred construction-related traffic route to and from the project work site is the following:

- **Highway 101 Direct, through Bull Creek -** Direct access from Highway 101 along Mattole Road is 22 miles, passing through Humboldt Redwoods State Park and Bull Creek. Roadway geometry on this route limits vehicular length to approximately 50 feet.

An alternative, but less practicable route is the following:

- **Highway 101 via Petrolia** - The bridge site can also be accessed from the northwest, through Ferndale and Petrolia. Construction equipment and materials have historically been transported into the Honeydew area via this route, and the transport of bridge member lengths up to 90 feet may be possible. However, the George Lindley Memorial Bridge (4C-78) in Petrolia and the Dry Creek Bridge (4C-241) capacities will prevent permit trucks from using this third route.

Construction access using Wilder Ridge Road and Briceland Thorne Road from Highway 101/Ettersburg would be impracticable due to windy, steep, and occasionally unpaved road sections that make it unsuitable for large vehicles.

Bridge Demolition

The existing bridge, if not sold, would be demolished, and would become the property of the contractor. A few beams and other pieces may be saved and temporarily stored by the County for eventual use by the Mattole Historical Museum. Flexibility will be allowed in the contract to permit the contractor to select a preferred dismantling method and sequence.

Water Pollution Prevention

The contractor will provide temporary water pollution control measures, including but not limited to dikes, basins, and ditches, which may become necessary as a result of the construction process.

1.5.3. UNIQUE FEATURES OF BUILD ALTERNATIVES

Construction activities would differ slightly among the alternatives. It is anticipated that Alternative 2 (the recommended Preferred Alternative) would require 154 days to construct. Alternative 1 would require 163 days, and Alternative 3 would require 183 days.

Alternative 1 most closely matches the current bridge's design. The relatively lightweight steel truss superstructure would allow for extended maneuverability by the construction cranes, thus avoiding the need for a work trestle over the Mattole River. Alternative 1 would also have the greatest freeboard clearance for hydraulic conveyance among the three build alternatives. During construction, gravel pads in the margins of the live stream would be necessary.

Alternative 2, the steel girder alternative, would allow for crane working ranges that would be long enough to avoid the need for a work trestle over the Mattole River. As it would be for Alternative 1, temporary work pads would be necessary in the margins of the live stream. For both Alternatives 1 and 2, cranes would be able to work from the north bank or north abutment and the south gravel bar when placing all the superstructure sections.

Alternative 3 would use a concrete girder design. Alternative 3 is the least expensive alternative and is similar in design to Alternative 2 (the recommended Preferred Alternative).

1.5.4. COMPARISON OF ALTERNATIVES

The three build alternative designs follow the same alignment and would affect the same segments of area roads (Mattole, Burrel, and Wilder Ridge Roads). In addition, all three alternatives would involve removal of the existing bridge. The three build alternative structures would, however, differ with respect to several key physical characteristics. Table 1-2 presents these key differences.

Table 1-2. Alternatives Comparison

Feature	Proposed Project Alternatives			
	No-Build (Existing Bridge)	Alternative 1	Alternative 2	Alternative 3
Structure Type	Camelback truss with wood deck	Camelback truss	Steel girder	Concrete girder
Total Length	386	375 feet 3 inches	375 feet 3 inches	375 feet 3 inches
Bridge Spans	2	2	2	2
Number of Piers	1	1	1	1
Superstructure Depth (inches)	48	43	125	118
Minimum Hydraulic Clearance	11	10.96 at south abutment	5.07 feet at the pier	5.66 feet at the pier
Traffic Lanes	1	2	2	2
Traffic Lane Widths	Total bridge width is 17 feet	Two 11-foot-wide lanes; 2-foot-wide bridge rails; and 3-foot-wide shoulders; 32 feet clear width	Two 11-foot-wide lanes; 2-foot-wide bridge rails; and 3-foot-wide shoulders; 32 feet clear width	Two 11-foot-wide lanes; 2-foot-wide bridge rails; and 3-foot-wide shoulders; 32 feet clear width
Roadway Approaches	24 feet wide with shoulders	Two 12-foot-wide lanes; 4-foot-wide shoulders; and 3-foot-wide, unpaved shoulders	Two 12-foot-wide lanes; 4-foot-wide shoulders; and 3-foot-wide, unpaved shoulders	Two 12-foot-wide lanes; 4-foot-wide shoulders; and 3-foot-wide, unpaved shoulders
Anticipated Days to Construct	N/A	163	154	183

1.5.5. IDENTIFICATION OF PREFERRED ALTERNATIVE

After comparing and weighing the benefits and impacts of all practicable alternatives, the project development team identified Alternative 2 as the Preferred Alternative. The Preferred Alternative meets the project's purpose and need by constructing a new bridge that meets modern highway design standards and that provides a safe route for vehicles, pedestrians, and bicyclists, while minimizing temporary and permanent impacts on the natural and human environments. Alternative 2 also has the shortest construction period and lower cost to construct and maintain compared to Alternative 1. Other advantages of Alternative 2 are that it allows for crane ranges that are long enough to minimize the need for work trestle over the Mattole River.

1.5.6. ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER DISCUSSION PRIOR TO DRAFT ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL ASSESSMENT (EIR/EA)

The following design alternatives were initially considered during project development, but were eliminated before preparation of the Draft Environmental Impact Report/Environmental Assessment (Draft EIR/EA):

- New bridge on a new alignment
- Three-span composite welded steel girder bridge
- Additional designs of a two-span structure on the existing alignment
- Transportation system management (TSM) and transportation demand management (TDM) alternatives

NEW BRIDGE ON NEW ALIGNMENT

A new bridge on a new alignment was first proposed in 1972. Several potential bridge alignments were analyzed for locations 1,800 feet or less downstream from the existing bridge. One new bridge location was eliminated because it traversed two flat properties on each side of the river. Alignments were analyzed that followed steeper terrain and affected less flat land. Such alternatives were eliminated because they would have contained substandard grades or alignments. Other new bridge locations were eliminated because they would require a sharp skew angle to the river or be on an 850-foot-radius curve. Additional reasons for eliminating consideration of a new alignment included the potential need for an excessively high structure, major modifications to Burrel Road, and impacts on three homes.

Initial consideration of a new bridge on a new alignment favored an alignment option 1,800 feet downstream from the existing bridge. This alignment would have allowed for realignment of the Mattole Road northern bridge approach to avoid several hillslope curves. A new bridge at this location would cost approximately twice as much as replacing the bridge on its existing alignment. A total of 2,500 linear feet of new approach roadway would be required for a new alignment. In addition, a new bridge would require substantial amounts of fill to be placed within the floodplain, which would likely increase flood damage risks. A new bridge location would also have more significant environmental impacts for which mitigation may not have been feasible, and right of way south of the river was not secured. For these reasons, a new bridge location was not considered for future analysis.

THREE-SPAN COMPOSITE WELDED STEEL GIRDER BRIDGE

This alternative would have included construction of a new bridge on the existing alignment like Alternative 2 (the Preferred Alternative) would, but with three spans and an additional pier. This alternative would have a superstructure depth of 92 inches at the pier and would have a minimum hydraulic clearance of 7.38 feet at Pier 3. This structural design would create more obstructions in the channel than other alternatives, resulting in higher probability of flood debris accumulating and lower hydraulic conveyance. This alternative was therefore eliminated from further consideration.

TWO-SPAN BRIDGES ON EXISTING ALIGNMENT

Several additional two-span bridges were proposed for the existing alignment:

- Two-span, prestressed, cast-in-place concrete box girder bridge
- Two-span, conventionally reinforced concrete box girder bridge
- Two-span, steel, tied-arch bridge

The cast-in-place and reinforced concrete box girder bridges were eliminated from consideration due to their excessive construction time, which would have resulted in a higher potential for environmental impacts that the other alternatives. The tied-arch bridge would be significantly more expensive than the other alternatives and would also have extended construction time, with a greater potential to have impacts on listed salmonids and water quality.

TRANSPORTATION SYSTEM MANAGEMENT AND TRANSPORTATION DEMAND MANAGEMENT ALTERNATIVES

TSM and TDM strategies are used to manage traffic flow and congestion. Example strategies of TSM include adjusting signal timing or vehicle detection systems to change signals. The project need does not include managing traffic flow and volume; therefore, TSM and TDM were not considered for the Honeydew Bridge Replacement Project.

1.6. Permits and Approvals Needed

The permits, reviews, and approvals listed in Table 1-3 will be required for project construction.

Table 1-3. Permits, Reviews, and Approvals Required for Project Construction

Agency	Permit/Approval	Status
National Marine Fisheries Service (NMFS)	Biological Opinion	A Biological Opinion issued on October 16, 2020, by NMFS concurred with the Biological Assessment/Essential Fish Habitat Assessment (BA/EFHA) that the project would adversely affect the essential fish habitat (EFH) of Pacific Coast salmon.
U.S. Army Corps of Engineers (USACE) - San Francisco District	Clean Water Act Section 404	Following completion of final environmental documentation, a 404 permit application will be submitted to USACE.
California Department of Fish and Wildlife (CDFW)	1602 Agreement for Streambed Alteration	Following completion of final environmental documentation, a 1602 permit application will be submitted to CDFW.
	California Endangered Species Act (CESA) Consultation	CDFW determined that a consistency determination is not required under Section 2080.1 for take of coho salmon (Appendix D in the BA/EFHA). A consistency determination may be needed for steelhead if CDFW determines that there is take of the species. Consultation for steelhead is pending.

Agency	Permit/Approval	Status
Regional Water Quality Control Board (Regional Board)	Clean Water Act Section 401	Following completion of final environmental documentation, a 401 permit application will be submitted to the Regional Board.
State Historic Preservation Officer	Memorandum of Agreement (MOA) Concurrence with Finding of Effects	The MOA was executed January 18, 2019, following the completion of Section 106 consultation . An amended MOA was adopted on August 5, 2021, to address minor changes to the APE.
State Lands Commission	General Lease Permit	A permit application will be submitted after the environmental document is approved.

Chapter 2. Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

This Chapter explains the impacts that the project would have on the human and physical environments in the project area. It describes the existing setting of the affected environment; potential direct and indirect impacts resulting from the implementation of each alternative during construction and operation of the project; and proposed avoidance, minimization, and/or mitigation measures.

As part of the scoping and environmental analysis carried out for the project, the following environmental issues were considered but no adverse impacts were identified. As a result, there is no further discussion about these issues in this document.

- **Coastal Zone:** There would be no impacts on coastal resources because the project would not occur within the coastal zone.

- **Farmlands/Timberlands:** The project would not adversely affect any farmlands or timberlands. The project includes replacement of the existing bridge and the construction of a detour bridge downstream. There are no designated farmlands, or land under a Williamson Act contract, or timberlands that would be affected by the project.

- **Parks and Recreation:** There are no formal parks or established recreational uses in the project area or immediate vicinity. An outdoor area adjacent to the east side of Honeydew Store is used by the community as an informal gathering place. This area is further discussed in Section 2.1.2 Community Impacts. Implementation of any of the project alternatives would not inhibit the use of any established park facilities.

  Similarly, although the reach of the Mattole River in the project area is publicly accessible and is used on occasion for recreational activities such as fishing and rafting, there are no established recreational facilities in the project area. Other opportunities for recreation along the river would remain available to the public both up- and downstream of the project area during construction.

- **Growth:** The addition of a traffic lane and improved pedestrian and bicycle crossing access over the Mattole River would not induce growth related to land use, economic continuity, community dynamics, or population density. The unincorporated community of Honeydew and the surrounding region are isolated and rural, having no designated commercial or residential district land uses. Population growth in and around Honeydew would not be influenced by the additional capacity of the new bridge.

- **Accessibility**: Use of the temporary detour bridge would maintain access for the Honeydew community and travelers along Mattole Road. The detour route along Burrel Road, Mattole Road, and over the temporary bridge would add very minor increases to travel time.

- **Wild and Scenic Rivers:** Honeydew Bridge crosses the Mattole River, which is not officially designated as a Wild and Scenic River; however, it does have an Outstanding Remarkable Value (ORV) for fish (National Park Service [NPS] 2009). The ORV for fish is discussed in Section 2.3.5.

2.1. Human Environment

2.1.1. LAND USE

REGULATORY SETTING

Planning goals and policies directing the physical development of the area surrounding the Honeydew Bridge Replacement Project are described below.

Regional and Local Plans and Programs

The build alternatives were reviewed for consistency with all applicable plans, goals, and policies. Applicable plans include the following:

- *Humboldt County General Plan* (Humboldt County 2017)
- *HCAOG Regional Transportation Plan, Variety in Rural Options of Mobility* (VROOM) (HCAOG 2017a)

Table 2-1 presents the results of the consistency review.

Table 2-1. Consistency with Regional and Local Plans and Programs

Policies	Preferred Alternative and Build Alternatives	No-Build Alternative
Humboldt County General Plan		
AG-P5. Conservation of Agricultural Lands. Agricultural lands will be conserved, and conflicts minimized between agricultural and non-agricultural uses through all of the following: D. By not allowing the conversion of agricultural resource production lands to other land use designations outside of Urban Expansion Areas. E. By assuring that public service facility expansions and non-agricultural development do not inhibit agricultural viability, either through increased assessment costs, degradation of the environment, land fragmentation or conflicts in use. G. By allowing historical structures and/or sensitive habitats be split off from productive agricultural lands where it acts to conserve working lands and structures.	None of the build alternatives would permanently convert agricultural lands to non-agricultural uses. The project area is designated and zoned as agricultural land; however, the portions of the project area affected by construction would be in existing road corridors and through river channel/floodplain. Agricultural activities in the Honeydew area would not be adversely affected by project construction.	The No-Build Alternative would not modify or change any structures or land use. No impacts on agricultural lands would occur.

Policies	Preferred Alternative and Build Alternatives	No-Build Alternative
Goals		
PL-G1. Coordinated Planning. Coordinated planning of public land uses and management between the County of Humboldt and federal and state agencies.	Regardless of the selected action alternative, the County will coordinate project implementation with all required federal and state agencies.	The No-Build Alternative would fail to address identified safety hazards and traffic circulation limitation associated with the existing bridge. Some coordination between federal, state, and local agencies may be needed to identify alternative safe travel routes and access to regional land uses.
C-G1. Circulation System Safety and Functionality. A safe, efficient, and accessible and convenient circulation system in and between cities, communities, neighborhoods, hamlets, and adjoining regions taking into consideration the context-specific needs of all users, consistent with urban, suburban, rural or remote community character.	Each of the build alternatives would create a structure capable of maintaining access in support of land uses throughout the region.	The No-Build Alternative would not modify or construct any improvements to the existing bridge. Structural limitations of the existing bridge affect the circulation of traffic in the region, and thus some land uses associated with traffic circulation.
C-S2. Neighborhood Connectivity. Local roads shall be planned to allow for orderly development of the community. Standards for neighborhood connectivity shall be those specified in Title III - Land Use and Development Division 2 Subdivision Regulations. Connectivity standards shall govern [in part]: F. Access connections between local, connector, and arterial roads.	The existing bridge does not meet modern transportation infrastructure standards. Each build alternative would construct a bridge and roadway approaches that meet modern standards and maintain and enhance local and regional neighborhood connectivity.	The No-Build Alternative does not meet modern standards for the road crossing over the Mattole River. Neighborhood connectivity is dependent on traffic limitations associated with the existing bridge.
Humboldt County Association of Governments Regional Transportation Plan		
Objective: Equitable and Sustainable Use of Resources. Recognize the connections between transportation and land use. Policy C-3: Support local communities in developing integrated transportation and land use strategies for responding resiliently to climate change, and codifying such strategies in General Plans, Regional Transportation Plans, and Local Coastal Programs.	The project would be consistent with integrated transportation and land use strategies that respond to climate change.	The No-Build Alternative would not be consistent with current climate change strategies. Limitations on the size of vehicles that can cross the Mattole River via the existing bridge results in extensive rerouting of large trucks and vehicles throughout the region.

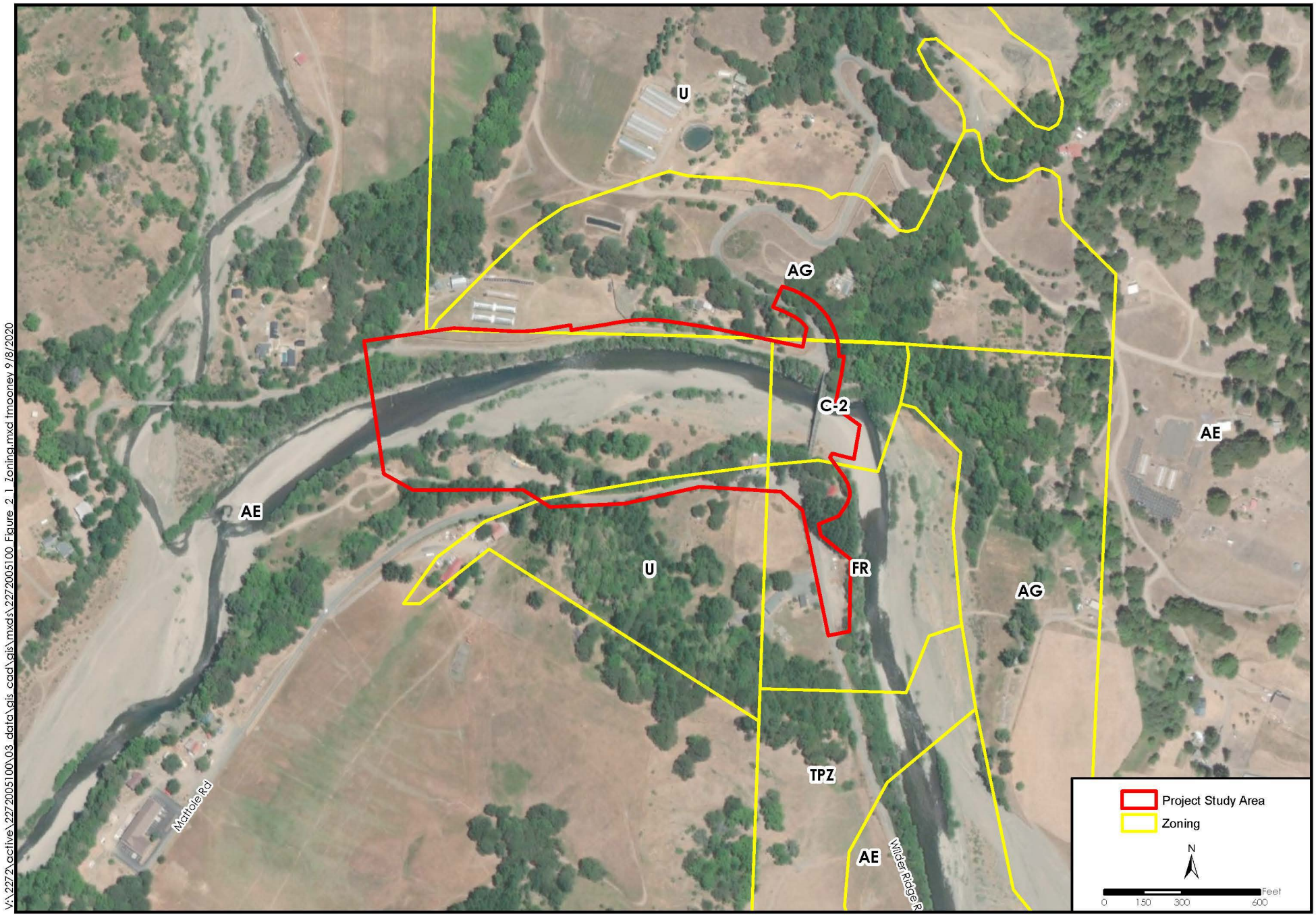
EXISTING LAND USE

Honeydew is a rural, unincorporated Humboldt County community centered on the Mattole River. The project area would involve approximately 28.10 acres to accommodate the proposed permanent and temporary construction features (Figure S-2). The project would occur mainly in

existing road corridors: Mattole Road (200 feet north and south of the existing bridge); the existing Honeydew Bridge; approximately 1,600 linear feet of Burrel Road; approximately 600 linear feet of Wilder Ridge Road, from its intersection with Mattole Road; an approximately 300-foot segment of Mattole Road on the south side of the river; and a private access road to the floodplain. Also included in the project area would be the Mattole River channel and floodplain, and an existing gravel storage area.

In addition to the existing Honeydew Bridge, paved and unpaved road corridors, and County right of way, development in the project area consists of widely spaced rural residential and light commercial development, including the Honeydew Country Store/Post Office. Adjacent to the east side of the store is an informal outdoor community gathering spot. Agricultural crops and grazing lands are interspersed throughout the community of Honeydew and vicinity. The Mattole River floodplain is undeveloped, except for the existing Honeydew Bridge piers and abutments. Dense riparian vegetation buffers the uplands from the floodplain. Approximately 400 feet south along Wilder Ridge Road is the Honeydew Elementary School, and approximately 900 feet west of the store, between Mattole Road and the river, is a private gravel stockpile storage area.

The project area and surrounding Honeydew community contain several land use designations under the *Humboldt County General Plan* (Humboldt County 2017). Designated land uses in the project area include Agricultural Exclusive (AE) and Agricultural General (AG) - Grazing (see Figure 2-1), which indicate lands used for farms and grazing and only support residential uses that also include agricultural operation. The Honeydew Elementary School parcel is designated as Rural Community Center (RCC), which is a common designation in small, unincorporated communities that do not have designated commercial or residential districts. Zoning classifications are mostly consistent with the land use designations. Zoning in the project area includes AE, AG – Special Building Site (B), Forestry Recreation (FR), Community Commercial (C-2), and Unclassified (U) (see Figure 2-1). Table 2-2 summarizes existing land and on the parcels included in the project area and the project-related land uses anticipated to occur during project construction.



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Honeydew Bridge Replacement Project

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Figure 2-1 Zoning Classifications

Table 2-2. Existing and Project-Related Zoning and Land Uses on Parcels Included in the Project Area

Assessor Parcel Number (APN)	Acreage	Zoning[1]/ General Plan[2] Designation	Existing Use	Project Construction Activity
107-102-013	16.21	C-2, FR-B-5(2.5)/RCC	Mattole Road Wilder Ridge Road Portion of Honeydew Bridge Honeydew Country Store/Post Office Residence southeast of bridge	• Southern staging area • Gravel bank staging area • Access road
107-102-016	33.14	AE, U/AG, RCC	Mattole Road Vacant lot used for material storage Residence southeast of project	• Detour bridge • Western staging area
107-271-001	8.20	AG-B-6/AE	Agricultural residential property	• Access
107-102-017	13.00	AE/AG, RCC	Mattole River	• Detour bridge
107-271-002	7.00	AG-B-6/AE	Portion of Honeydew Bridge Residential properties	• Access to Honeydew Bridge • Roadway approach work
107-272-012	8.38	AG-B-6/AE	Portion of Honeydew Bridge Residential property	• Access to Honeydew Bridge • Roadway approach work

[1]Zoning Designations: Agriculture Exclusive (AE); Agriculture General - Special Building Site (AG-B); Community Commercial (C-2); Forestry Recreation-Special Building Site (FR-B); Unclassified (U).
[2]General Plan Land Use Designations: Agricultural Exclusive (AE); Agricultural Grazing (AG); Rural Community Center (RCC)

ENVIRONMENTAL CONSEQUENCES

No-Build Alternative

Under the No-Build Alternative the existing bridge would remain and no improvements or modifications to the current structure would occur. Impacts on land use would remain consistent with existing conditions, including limitations on access by vehicles such as large trucks used to support agricultural land uses. The existing bridge does meet modern transportation infrastructure standards and does not provide safe crossing conditions for pedestrians or bicyclists. This alternative would be inconsistent with the goals and policies of the Humboldt County General Plan and the HCAOG VROOM.

Alternative 1 - Camelback Bridge

Alternative 1 would have construction and operational impacts on land use in the Honeydew area that would be similar to those described for Alternative 2 (the Preferred Alternative). Alternative 1 would, however, take approximately 4 fewer weeks to construct than the Preferred Alternative (Table 1-2), so the use of staging areas and the temporary detour would occur for a slightly longer period under Alternative 1 than under the Preferred Alternative.

Alternative 2 - Steel Girder Bridge (Preferred Alternative)

Construction Impacts

Construction impacts on land use in and adjacent to the project area would be minor. Because the project would occur largely within existing road corridors, there would be no changes in land use aside from the temporary Mattole River detour and crossing that would be constructed in the river channel approximately 1,600 feet downstream of the existing bridge. This crossing would ensure that access, including traffic circulation tied to local and regional land uses, would be maintained during construction.

It is anticipated that for public safety reasons, the reach of Mattole River in the project area would be temporarily closed to recreational uses (e.g., fishing, rafting) during construction. However, there are no established recreational facilities in the project area and ample opportunities for recreation along the river are available up- and downstream of the project area.

Construction of the Preferred Alternative (Alternative 2) would not conflict with any applicable land use plan or divide any established communities.

Construction Criteria

Access to residential and commercial properties adjacent to the project area will be maintained during project construction. Project implementation would have no effect on residential parking, although a pullout along Wilder Ridge Road used by some residents to park vehicles and equipment off-site would be used temporarily for contractor staging. This could temporarily limit off-site parking availability if staging occupies the entire pullout.

Operational Impacts

Alternative 2 (the Preferred Alternative) would be consistent with all applicable land use goals, policies, and programs. The project would be aligned in the existing road corridors and would not require a change in current land uses. A monument marker to commemorate the history of the existing bridge would be placed in the County's right of way near the northwest corner of the new bridge alignment. There would be no adverse impacts on land use as a result of this project for Alternative 2 (the Preferred Alternative).

Alternative 3 - Concrete Girder Bridge

Alternative 3 would have construction and operational impacts on land use in the Honeydew area similar to those described for Alternative 2 (the Preferred Alternative). Alternative 3 would,

however, take approximately 4 more weeks to construct than Alternative 2 (the Preferred Alternative) (see anticipated days to construct in Table 1-2).

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No avoidance, minimization, and/or mitigation measures are proposed for temporary impacts on land use.

2.1.2. COMMUNITY IMPACTS

COMMUNITY CHARACTER AND COHESION

Community character is defined by demographics, housing characteristics, economic conditions, and community facilities. Community cohesion is defined as the degree to which residents are connected to their community through attachment to neighbors, groups, institutions, and community events. This section focuses on community character, population, and housing characteristics of the community of Honeydew and the surrounding area.

Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969, as amended, established that the federal government use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 United States Code [USC] 4331[b][2]). The FHWA in its implementation of NEPA (23 USC 109[h]) directs that final decisions on projects are to be made in the best overall public interest. This requires considering adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

Under the CEQA, an economic or social change by itself is not to be considered a significant effect on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is significant. Because this project would result in physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the project's effects.

Affected Environment

The project study area includes the community of Honeydew, centered on Mattole Road in unincorporated Humboldt County (Figure S-1). The roughly 2 square miles that make up Honeydew had a population in 2019 of 118 (U.S. Census Bureau [USCB] 2021). The community of Honeydew is roughly 10 miles southeast of the community of Petrolia and approximately 4 miles southwest of Humboldt Redwoods State Park, which contains the tourist destination known as the "Avenue of the Giants." No nearby destinations such as campgrounds, parks, or wildlife preserves would be affected by the project.

Homes in the area are generally widely spaced (characterized as rural residential), although there are several residences on small parcels just east of the intersection of Wilder Ridge Road and Mattole Road.

Community Facilities

Honeydew contains two community buildings and one school. The Honeydew Country Store/Post Office is at the center of the community near the intersection of Wilder Ridge Road and Mattole Road. The store sells general provisions and fuel and includes a small outdoor area with benches and tables where residents and visitors often congregate and socialize. Honeydew Elementary School is just south of the Country Store. Community functions and events are occasionally held at the school, but also are held at the Mattole Grange #569 approximately 7 miles west of Honeydew.

Households and Demographics

Demographic data includes a variety of factors that help identify the level of cohesion in the community. Indicators of community character and cohesion include long-term residency, households with one or more people, percentage of home ownership, low density housing, frequent personal contact, ethnic homogeneity, amount of community activities, stay-at-home parenting, and elderly residents. Honeydew is on the border of two U.S. Census Tracts. Demographic data was obtained from the American Community Survey (ACS), which is a nationwide survey that replaced the decennial census long form in 2010.

Table 2-3 shows household and demographic data from the 2011–2018 estimated 1- and 5-year ACS (USCB 2018a, 2018b) for Census Tracts 112, 115, and Humboldt County. The median age and percentage of older individuals in the census tracts are slightly higher than Humboldt County as a whole. The number of vacant housing units varies substantially between the two census tracts and is substantially higher than the larger county. The percentage of home ownership in the census tracts is approximately 65 percent, which is slightly higher than the total county. Although the average household size is less than three, it is consistent with the county's average. The census tracts indicate the presence of a high percentage of homeowners and elderly citizens despite a high percentage of vacant housing units. Seasonal agricultural workers create temporary upward trends in the local population, particularly during the fall.

Table 2-3. Household and Demographics

Category	Humboldt County[a]	Census Tract 112	Census Tract 115
Total population	136,373	3,287 [b]	3,029 [b]
Median age (years)	38.5	44.2 [b]	47.1 [b]
Population 60 years of age and older	30,861 (18.6% of total population)	983 [b] (29.9% of total population)	982 [b] (32.4% of total population)
Occupied housing units	55,773 (88.1% of total housing units)	1,315 (76.7% of total housing units)	1,426 (53.9% of total housing units)
Vacant housing units	7,535 (11.9% of total housing units)	400 (23.3% of total housing units)	1,222 (46.1% of total housing units)

Category	Humboldt County[a]	Census Tract 112	Census Tract 115
Owner-occupied housing units	29,758 (53.4% of occupied housing units)	789 (60% of occupied housing units)	936 (65.6% of occupied housing units)
Average household size of owner-occupied housing units	2.47	2.25	2.48

[a,b] Sources: USCB 2018a, b

ENVIRONMENTAL CONSEQUENCES

No-Build Alternative

Under the No-Build Alternative there would be no changes to Honeydew's community character or the cohesion of its residents. Retention of the existing single-lane bridge would fail to address safety issues such as lack of a designated pedestrian walkway and the potential hazards related to limited overhead clearances. In addition, the bridge's age and structural insufficiency could require its future closure due to public safety issues. Permanent closure of this important regional transportation route would divide and established community and influence future growth.

Alternative 1 - Camelback Truss Bridge

The impacts of Alternative 1 on Honeydew's community character and cohesiveness would be similar to those described under Alternative 2 (Preferred Alternative).

Alternative 2 - Steel Girder Bridge (Preferred Alternative)

Construction Impacts

Short-term, construction-related impacts would be minor and temporary. Construction would not separate residences from community facilities, significantly affect public access, or divide neighborhoods. There could be some overlap between the two-season construction window and occasional community events, but the with work being primarily within existing road corridors, and the temporary detour across the Mattole River being away from the center of the community, the potential for conflicts would be low.

Operational Impacts

The new bridge would change the visual character of Honeydew but would not affect its community character or the cohesion of its residents, because the visual effect would be limited in degree and extent. (Section 2.1.7, Visual/Aesthetics, provides a detailed assessment of anticipated effects on the visual character of Honeydew as a result of the project and its alternatives.) There would be no impacts on residential areas. The planned inclusion of an interpretive site, including a monument marker near the northwest corner of the new bridge, would commemorate the history of the existing bridge and potentially create a sense of

community cohesion. Project operation would not change public access, divide neighborhoods, separate residences from community facilities, increase urbanization or isolation, or change the quality of life of Honeydew's residents. The project would have no impact on growth, population, or housing in the area.

Alternative 3 - Concrete Girder Bridge

The impacts of Alternative 3 on Honeydew's community character and cohesiveness would be similar to those described under Alternative 2 (Preferred Alternative).

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No avoidance, minimization, and/or mitigation measures are proposed.

2.1.3. RELOCATIONS AND REAL PROPERTY ACQUISITION

REGULATORY SETTING

The Department's Relocation Assistance Program (RAP) is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act), and Title 49 CFR Part 24. The purpose of the RAP is to ensure that persons displaced because of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. A summary of the RAP is provided as Appendix D.

All relocation services and benefits are administered without regard to race, color, national origin, persons with disabilities, religion, age, or sex. Please see Appendix E for a copy of Caltrans' Title VI Policy Statement.

AFFECTED ENVIRONMENT

The project area is centered on the County's existing right of way of Mattole and Burrell Roads. Adjacent parcels are used primarily as rural residences with some agricultural uses (i.e., cultivated crops and grazing), while others support commercial uses including the Honeydew Country Store and Post Office and community-centered uses such as the school. Parcels affected by the proposed temporary detour and construction staging are undeveloped in the portions proposed for project use. There would be no permanent acquisition of real property needed for the project.

ENVIRONMENTAL CONSEQUENCES

No-Build Alternative

Under the No-Build Alternative there would be no need for property acquisitions, additional right of way, or temporary easements.

Alternative 1 - Camelback Truss Bridge

The impacts of Alternative 1 on real property in and near the project area would be similar to those described under Alternative 2 (Preferred Alternative).

Alternative 2 - Steel Girder Bridge (Preferred Alternative)

Construction Impacts

Temporary construction easements would be required for construction access to the existing bridge, staging, and use of the detour bridge. A monument commemorating the historic Honeydew Bridge is planned in a pullout in existing right of way near the Mattole Road and Burrell Road intersection at the north end of the bridge.

Construction is anticipated to last for two seasons. Although homes and businesses on parcels in and adjacent to the project area could experience project-related effects such as noise and traffic, these impacts would be temporary and would not require relocation of people or acquisition of additional lands as mitigation. Table 2-4 lists the parcels that would be affected by project implementation and notes the need for temporary construction easements or real property acquisition. Figure 2-2 shows the parcel layout within the project area and the areas where temporary construction easements would be needed.

Table 2-4. Real Property Requirements for Parcels Affected by Project Implementation

Assessor Parcel Number (APN)	Existing Use	Construction Need	Real Property Requirement
107-102-013	• Mattole Road • Wilder Ridge Road • Portion of Honeydew Bridge • Honeydew Country Store/Post Office • Residential - southeast of Mattole Road/Wilder Ridge Road intersection	• Southern staging area • Gravel bank staging area • Access road	• Temporary Construction Easement
107-102-014	• Honeydew School • Gravel parking area on east side of Wilder Ridge Road	• Southern staging area	• Temporary Construction Easement
107-102-016	• Mattole Road • Vacant lot used for material storage • Rural Residential	• Detour bridge and roadway • Western staging area	• Temporary Construction Easement
107-102-017	• Rural Residential • Mattole River corridor	• Detour bridge	• Temporary Construction Easement
107-271-001	• Rural Residential • Agriculture	• Access	• Temporary Construction Easement
107-271-002	• Portion of Honeydew Bridge • Rural Residential	• Access to Honeydew Bridge	• Temporary Construction Easement

Assessor Parcel Number (APN)	Existing Use	Construction Need	Real Property Requirement
		• Roadway approach work	
107-272-012	• Portion of Honeydew Bridge • Rural Residential	• Access to Honeydew Bridge • Roadway approach work	• Temporary Construction Easement

Operational Impacts

Under Alternative 2, the existing bridge would be replaced on the same alignment. Minor modifications to the southern and northern approaches would occur for approximately 200 feet in each direction; however, no property acquisitions outside of the existing right of way would occur. MBGRs may be required between Mattole Road and the residence at the southeast corner of the bridge; however, the MBGR would not encroach into the property outside of the right of way.

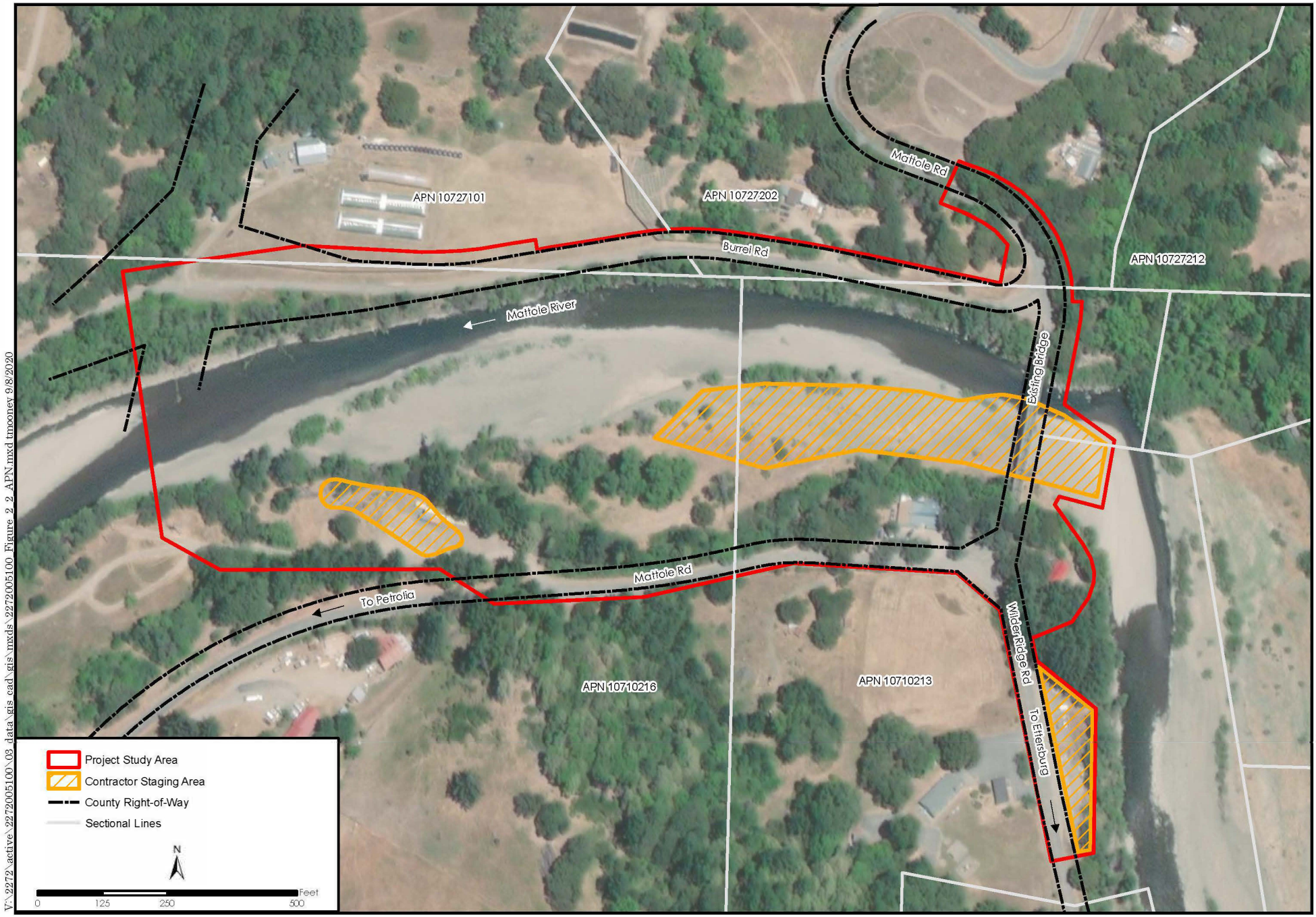
As previously described, the proposed commemorative monument would be located near the Mattole Road and Burrell Road intersection at the north end of the bridge. An existing pullout in the County-owned right of way is of sufficient size and in a location that would be suitable for public access.

Alternative 3 - Concrete Girder Bridge

The effects of Alternative 3 on real property in and near the project area would be similar to those described under Alternative 2 (Preferred Alternative).

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No avoidance, minimization, and/or mitigation measures are proposed.



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Honeydew Bridge Replacement Project

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Figure 2-2 Assessor Parcel Numbers and Temporary Construction Easements

2.1.4. ENVIRONMENTAL JUSTICE

REGULATORY SETTING

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President William J. Clinton on February 11, 1994. This EO directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse impacts of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2018, this was $25,100 for a family of four (US Department of Health and Human Services 2018).

All considerations under Title VI of the Civil Rights Act of 1964, and related statutes, have also been included in this project. Caltrans' commitment to upholding the mandates of Title VI is demonstrated by its Title VI Policy Statement, signed by the Director, which can be found in Appendix E of this document.

AFFECTED ENVIRONMENT

Humboldt County is a rural region with substantial amounts of public land. As a result, the region is largely dependent on natural resources and tourism for its economic base. The community of Honeydew offers limited services, including several commercial enterprises, a U.S. Post Office and country store, and an elementary school. Although tourists and recreationists may use the Honeydew area to access the Mattole River or as a temporary stop when touring the back roads of the Lost Coast region, there are no formal businesses in Honeydew that depend on transitory visitors to the area. The community of Honeydew is primarily residential, and although it does have a significant agricultural product base, its primary socioeconomic benefit to Humboldt County is through property tax revenues.

Demographic data for the Honeydew area was compiled based on the community's zip code (95545). Based on the 5-year ACS for the years 2013–2017, the Honeydew area is predominantly white (81 percent) (USCB 2019). Table 2-5 summarizes the demography of the populations in the Honeydew zip code compared to the demographics for Humboldt County.

Table 2-5. Demographic Data

Category	Humboldt County	Honeydew Zip Code (95545)
Total population	135,490	112
White alone	109,346 (81%)	104 (93%)
Black or African American alone	1,609 (1%)	5 (4%)
American Indian and Alaskan Native alone	7,042 (5%)	0
Asian alone	3,926 (3%)	0

Category	Humboldt County	Honeydew Zip Code (95545)
Native Hawaiian or Pacific Islander alone	418 (<1%)	0
Some Other Race	5,318 (4%)	3 (3%)
Speak Only English	113,282 (84%)	109 (97%)

Source: U.S. Census Bureau 2019

Table 2-6 summarizes income data collected in 2017 and shown in 2017 inflation-adjusted dollars for Humboldt County and the area within the Honeydew zip code (i.e., 95545). Poverty rates in Honeydew are much higher than Humboldt County as a whole, despite mean household income being slightly higher. The census tract data therefore may not accurately represent the income and poverty levels in the Honeydew area.

Table 2-6. Income Data (in 2017 Inflation Adjusted Dollars) and Housing Values

Category	Humboldt County	Honeydew Zip Code (95545)
Median home value	$285,800	$297,700
Mean household income in the past 12 months	$43,718	$56,485
Portion of families with income below the poverty level in the past 12 months (all families)	10.5%	70.0%
Portion of all people with income below the poverty level in the past 12 months	20.8%	72.3%

Source: U.S. Census Bureau 2019; Sperling's Best Places 2019

ENVIRONMENTAL CONSEQUENCES

No-Build Alternative

Under the No-Build Alternative the project would not be constructed, and there would be no impacts on low-income or minority populations.

Alternative 1 - Camelback Bridge

The impacts of Alternative 1 on populations in the project area and vicinity would be similar to those described for Alternative 2 (the Preferred Alternative).

Alternative 2 - Steel Girder Bridge (Preferred Alternative)

Construction and Operational Impacts

The project would not result in any specific or disproportionate impacts on low-income or minority populations. No minority or low-income populations that would be adversely affected by

the proposed project have been identified as determined above. Therefore, this project is not subject to the provisions of EO No. 12898.

Based on the above discussion and analysis, Alternative 2 (the Preferred Alternative) will not cause disproportionately high and adverse effects on any minority or low-income populations in accordance with the provisions of EO No. 12898. No further environmental justice analysis is required.

Alternative 3 - Concrete Girder Bridge

The impacts of Alternative 2 on populations in the project area and vicinity would be similar to those described for Alternative 2 (the Preferred Alternative).

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No avoidance, minimization, and/or mitigation measures are proposed

2.1.5. UTILITIES/EMERGENCY SERVICES

AFFECTED ENVIRONMENT

Water Utilities

Humboldt County has community service districts, sanitary districts, a municipal water district, and incorporated cities that provide water and wastewater. The community of Honeydew is outside of these service areas. Water systems in rural areas include community water systems; non-transient, non-community water systems; transient, non-community water systems; and state small water systems. These are classified based on the number of water connections, number of persons served, and regularity of service. Honeydew is within the Cape Mendocino Planning Watershed. This planning watershed contains 470 municipal systems, 1,202 on-site systems, and 25 private wells[1] (Humboldt County 2017a). It is likely that most residences in and around the project area use groundwater systems (e.g., wells) for domestic water supplies; the Honeydew Country Store maintains a well monitored by the State that serves a population of 75 persons (Safe Drinking Water Information System 2018). Wastewater effluent is contained by individual septic systems.

Communication Services

AT&T, Verizon, and Frontier Communications provide telecommunications service in Humboldt County. Frontier Communications provide service to the Ferndale and Petrolia areas. The Honeydew area is among the underserved areas of Humboldt County having a combination of one or more of the following barriers to service: slow speeds, less than three providers, backhaul issues (availability and/or cost), no wireline coverage, or small provider coverage (Humboldt County 2017b). Overhead utilities near the bridge, particularly on the south side of the Wilder Ridge Road/Mattole Road intersection, may include phone lines. In addition, a public

[1] There are likely many more domestic wells than portrayed in the General Plan data.

phone booth south of the store appears to be serviced by an underground phone line, as evidenced by utility boxes that parallel the south side of Mattole Road.

Electricity and Natural Gas

Electricity and natural gas service throughout most of the unincorporated area of Humboldt County is provided by Pacific Gas and Electric Company (PG&E). Power sources for Humboldt County come from statewide power transmission facilities, the PG&E Humboldt Bay power plant, and several local power generators. Most natural gas used in Humboldt County is produced from a PG&E natural gas transmission facility that runs from Red Bluff to Alton (Winzler and Kelly 2008). Electricity in the Honeydew community is supplied by PG&E. Utility poles are along the south edge of the intersection of Wilder Ridge Road and Mattole Road. Most residences and businesses in the community of Honeydew and vicinity use propane for cooking and heating. The presence of underground electricity and natural gas utilities in the project area is unknown.

Fire and Sheriff Protection

The Humboldt County Sheriff's department provides police protection services for unincorporated parts of Humboldt County. The main police station is at 826 4th Street in Eureka. The closest patrol substation is in Garberville, approximately 20 miles southeast of the project area. There is also a resident deputy post in Petrolia roughly 10 miles northeast of the project area (Winzler & Kelly 2008).

Fire protection services in Humboldt County provide a range of services including medical assistance, auto extrication, technical rescue, hazardous material assistance, and public assistance. Humboldt County fire protection services include 1 county service area, 5 community service districts, 16 fire protection districts, 1 resort improvement district, and 2 city fire departments along with 18 volunteer fire departments (Humboldt County 2012). The project area is outside any of these district boundaries; however, fire departments regularly provide services to areas outside of their district boundaries.

The Honeydew Volunteer Fire Company has approximately 20 volunteer firefighters, but the closest fire department station is the Petrolia Volunteer Fire Department station at 98 Sherman Avenue in Petrolia approximately 10 miles northeast of the project area. The California Department of Forestry Mattole Fire Station is only 1/2 mile away from the project area and is a seasonal station operated under CalFire.

Emergency Medical Services

There are no hospitals near the project area. The closest hospital is the Jerold Phelps Community Hospital approximately 18 miles southeast of the project area in the community of Redway. Local fire departments and ambulance companies are dispatched by the County Office of Emergency Services; in most cases, the fire department based out of Petrolia arrives at the scene before the ambulance and will provide initial medical care.

Postal Service

The U.S. Postal Service receives and delivers mail at the local post office in the Honeydew Country Store at 44670 Mattole Road, Honeydew, CA 95545.

Solid Waste Processing and Disposal Facilities

The closest waste disposal facility is the Redway Transfer Station in Redway, approximately 17 miles southeast of Honeydew. Redway Transfer Station is a buy-back location for residential drop-off, accepting recycling materials and offering California Redemption Value containers for drop-off. Redway Transfer Station has an average annual capacity of 10,000 to 19,999 tons per year (CalRecycle 2021).

ENVIRONMENTAL CONSEQUENCES

No-Build Alternative

Under the No-Build Alternative the existing Honeydew Bridge would not be modified, and no construction would occur. Restricted passage of heavy equipment such as large utility trucks and fire suppression equipment would continue as a result of retaining the existing bridge. Thus, the No-Build Alternative would perpetuate the limitations on utilities and emergency services in the Honeydew area and the region created by the existing bridge.

Alternative 1 - Camelback Bridge

The impacts of Alternative 1 on utilities and emergency services in the project area and vicinity would be similar to those described for Alternative 2 (the Preferred Alternative).

Alternative 2 - Steel Girder Bridge (Preferred Alternative)

Construction Impacts

During construction, a temporary detour bridge would be used downstream from the existing bridge for two summer seasons. The temporary bridge would be capable of carrying 80,000-pound loads (i.e., the weight of a highway legal tractor/trailer combination), which would make it adequate for most emergency vehicles. The temporary detour route would be approximately 0.6 mile long, with emergency vehicles being given priority for passage through the project area. Local police and fire departments would be notified of the detour before construction. Construction would neither inhibit nor reduce utility or emergency service access or response times in the project area and surrounding community. Underground utility marking through a service such as 811 would be required before any excavation work related to the project.

Operational Impacts

Under Alternative 2, no utility lines would need to be relocated. The utility poles south of the Wilder Ridge Road and Mattole Road intersection would not be affected. There would be no disruptions and no increased demands in utilities or emergency services. The project would not induce growth or capacity, and therefore would not increase demand for public utilities such as

water or emergency services. The new bridge would have no vertical clearance limits and would be capable of conveying large vehicles such as emergency fire vehicles across the river. The presence of the new bridge at this location would greatly enhance the movement of emergency service and large utility vehicles in the region.

Alternative 3 - Concrete Girder Bridge

The impacts of Alternative 3 on utilities and emergency services in the project area and vicinity would be similar to those described for Alternative 2 (the Preferred Alternative).

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

As with any roadway construction project, it is a possibility that a lane or facility closure during construction could affect emergency service response time. Therefore, the following avoidance and minimization measure (AMM) will be used during construction.

- **AMM EMER-1:** During project construction, the County will coordinate with local emergency service providers to keep them informed of the project construction schedule and any detour routes to avoid or minimize any impacts. Additionally, the project Traffic Management Plan (TMP) will manage and minimize any circulation impacts during construction.

2.1.6. TRAFFIC AND TRANSPORTATION/PEDESTRIAN AND BICYCLE FACILITIES

REGULATORY SETTING

Caltrans, as assigned by the FHWA, directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of Federal-aid highway projects (see 23 CFR 652). It further directs that the special needs of the elderly and the disabled must be considered in all Federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

In July 1999, the U.S. Department of Transportation issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the USDOT regulations (49 CFR 27) implementing Section 504 of the Rehabilitation Act (29 USC 794). The FHWA has enacted regulations for the implementation of the 1990 Americans with Disabilities Act, including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the Americans with Disabilities Act requirements to Federal-aid projects, including Transportation Enhancement Activities.

AFFECTED ENVIRONMENT

Existing Bridge and Setting

The existing single-lane bridge is 386 feet long and 17 feet wide and has a vertical clearance of 14 feet. The bridge is posted to limit truck and bus speeds to 15 miles per hour. The bridge has a wooden deck and wooden side rails. The deck has two wooden wheelbases, each four boards wide. The bridge contains no shoulders or sidewalks for pedestrians and bicyclists.

The bridge is a critically needed regional route used for emergency vehicle access (for those vehicles that meet the weight and height limitations of the existing bridge) and for residents. Regionally available alternative routes are limited and are considerable distances from the community of Honeydew. The closest alternate route from the community of Honeydew to Highway 101 is via Wilder Ridge Road through Ettersburg to Redway, approximately 40 miles. The bridge is significant to the local economy as it provides access to agricultural lands and is used by residents, tourists, delivery trucks, emergency services, pedestrians, and bicyclists. There are no public transportation services in the project area.

Traffic Conditions

Mattole Road is a categorized as a rural major collector by Humboldt County. It is a narrow, two-lane road that generally does not have any shoulder and is divided by a single, dashed center line. Many sections contain potholes and uneven surfaces. Mattole Road is the only connection between many communities in the Mattole Valley, including Petrolia, Capetown, Honeydew, and Bull Creek, and is the primary route used by these communities to access Highway 101. It is a critical route for the transportation of agricultural products in and out of the area, as well as for emergency and maintenance services. From Highway 101, Mattole Road travels through the Humboldt Redwoods State Park, a popular tourist destination, before continuing to the community of Honeydew. Current average daily traffic (ADT) numbers are approximately 289 on the weekend and roughly 380 during weekdays, for a weekly average of 353 (Foster pers. comm. 2021).

Burrel Road is a rural, local road that provides access to several residences and other agricultural properties on the north side of the Mattole River in Honeydew. It is narrow and unpaved. Burrel Road begins at Mattole Road near the northwest corner of Honeydew Bridge, paralleling the north bank of the river before turning north and becoming a dirt track roughly 2 miles west of its origin. Burrel Road is lightly used by a limited number of residents for private property access.

Wilder Ridge Road begins just south of the Honeydew Bridge and parallels the King Range National Conservation Area until its end at the community of Ettersburg where it splits into Ettersburg Road and French Ranch Road. Wilder Ridge Road is classified as a minor collector and is a rural, two-lane road separated by a dashed center line in its northern half; it does not have shoulders. Wilder Ridge Road connects the Honeydew and Ettersburg communities and provides a secondary route to Highway 101 from Honeydew.

Safety Conditions

The existing Honeydew Bridge does not meet modern highway design standards or modern geometric and seismic standards. In addition, it provides unsafe crossing conditions for pedestrians and bicyclists due to its lack of shoulders and its slatted wooden deck. The vertical clearance limit is 14 feet, which restricts access to certain emergency vehicles and maintenance repair equipment.

Pedestrian and Bicycle Conditions

The existing Honeydew Bridge is the only river crossing point for residents and travelers in the Honeydew region. It serves as a critical connection for the community and is used by local community residents to access the Honeydew Country Store/Post Office, get across the Mattole River for recreational activities, or take students to the Honeydew Elementary School. The *HCAOG VROOM* identifies proposed class III bike lanes along the entirety of Mattole Road; however, no facilities currently exist (Humboldt County 2017).

ENVIRONMENTAL CONSEQUENCES

No-Build Alternative

Under the No-Build Alternative no improvements or modifications would occur to the existing bridge. Limited vertical and horizontal clearances and lack of structural integrity would continue to restrict larger vehicles from safe passage over the bridge, including some emergency response vehicles and trucks used for local agriculture. Alternative routes in the region are available, but lengthy. Pedestrians and bicyclists would continue to cross the bridge under unsafe conditions. The bridge would continue to function without meeting modern seismic and geometric standards. Current ADT numbers counted in 2017 are approximately 289 on the weekend and roughly 380 during weekdays, for a weekly average of 353 (Foster pers. comm. 2021). Assuming an annual traffic growth rate of 2.0 percent, the average weekly ADT would be approximately 405 in 2024 (this is the first year of the proposed 2-year construction period for the new bridge). These numbers are expected to increase to about 603 in 2044, which reflects the project's 20-year design period (as defined in Section 103.2 in Caltrans' Highway Design Manual [2020]). This increased capacity would put an additional strain on a bridge already operating at substandard levels.

Alternative 1 - Camelback Bridge

Alternative 1 would have operational impacts on traffic and transportation similar to those described under Alternative 2 (Preferred Alternative); however, Alternative 1 would be a truss structure like the existing bridge. While the vertical clearance would be higher (at 15 feet and 5 inches) than under existing conditions and would be adequate for most large vehicles to pass, it could prove to be a barrier to some vehicles.

Alternative 2 - Steel Girder Bridge (Preferred Alternative)

Construction Impacts

During the second construction season, a temporary detour would be created over the Mattole River to maintain traffic circulation while the old bridge is dismantled, and the new bridge is erected in its place. Alternative 2 would require that traffic be rerouted from Mattole Road via Burrel Road on the north side of the river, and from about 0.2 mile west of the Honeydew Country Store on the south side. A temporary single-span bridge would be installed roughly 1,600 feet west (downstream) from the existing bridge to maintain a single lane of traffic over the Mattole River, including pedestrians and bicyclists. The temporary bridge would be capable of carrying 80,000-pound loads (i.e., the weight of a highway legal tractor/trailer combination). The temporary detour route would be approximately 0.6 mile long. Because it would be a single-lane crossing, traffic may have short delays, but the impact would be minor. Construction-related traffic on Mattole Road and other areas roads is anticipated to increase the ADT by about 20 percent. This increase would, however, be temporary and is expected to occur during non-peak hours. Homes and businesses on both sides of the river would remain accessible during construction via the temporary detour.

Construction Criteria

Construction vehicles would park in designated staging areas and would not reduce parking or access for residents. Construction would require approximately 20 to 40 construction workers at any given time. Traffic added from construction workers would occur mostly during the week and would include 80 trips at the most (two trips per day for each worker), which would increase the ADT by approximately 20 percent. The transportation of equipment to the site would occur infrequently. This would be a minimal increase and construction workers tend to travel outside of peak hours without causing congestion on roadways.

During construction, construction workers and equipment would access the project area from Highway 101 to Mattole Road east. This would be the preferred route. Optional routes including via Highway 101 through Ettersburg and Wilder Ridge Road, and via Highway 101 through Petrolia and Mattole Road west are not suitable for use during construction due to weight and vehicle length limitations.

Operational Impacts

The bridge proposed under Alternative 2 would have no vertical clearance limit and would carry two lanes of traffic. Each lane would be 11 feet wide, and each would have 2-foot-wide bridge rails and 3-foot shoulders for a total width of 32 feet. The new bridge would allow for the safe passage of a variety of vehicles over the Mattole River via Mattole Road. The replacement bridge would have two travel lanes, thus eliminating wait times for vehicles approaching from opposite ends of the bridge. The new bridge would provide a safe river crossing for pedestrians and bicyclists by providing a dedicated, 3-foot-wide shoulder and solid surface deck. The new structure would meet current geometric and seismic safety standards and would be designed for the HL93, Tandem, and P15 Permit Design vehicle loadings as specified in Caltrans Bridge Design Specifications, Seismic Design Criteria V1.6, and the AASHTO 6th Edition.

Alternative 3 - Concrete Girder Bridge

The impacts of Alternative 3 on utilities and emergency services in the project area and vicinity would be similar to those described for Alternative 2 (the Preferred Alternative). Unlike Alternative 1, Alternative 3 would have no potential adverse operational impacts resulting from height restrictions.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Project impacts on traffic would be the same under the three proposed project action alternatives. The following AMM will reduce traffic impacts for all project action alternatives during construction:

- **AMM TRANS-1 Construction Traffic Management Plan.** Before construction, the County will prepare a TMP to address construction-related impacts on traffic circulation on Mattole Road and the Honeydew community. Project impacts on traffic would be the same under all three project build alternatives. The AMMs will be further developed in the TMP. The TMP will include, at minimum, the following elements:

    - Public notification (e.g., brochures, telephone hotline, mailers, project website) of roadway information will be provided before the start of construction so that travelers and residents may plan accordingly.

    - Signage (e.g., portable, changeable message signs or approved orange construction signage) providing travel delay or alternative route information will be used at major intersections associated with Mattole Road, such as at the Mattole Road/US 101 intersection (Exit 663) and at the start of Mattole Road in Ferndale. Signage will also be used in the community of Honeydew to alert travelers and residents to road construction activities. Other, lesser regional road intersections may also be equipped with signage.

    - The County will coordinate with local responder agencies (e.g., law enforcement, fire, medical) to develop an incident priority response plan through the work zone to minimize or avoid potential emergency response delays during construction.

    - Access to side roads and residences will be maintained at all times. When work or traffic queues extend through an intersection, additional traffic control will be required at the intersection.

    - Bicycles and pedestrians will be accommodated through the work zone during construction.

2.1.7. VISUAL/AESTHETICS

REGULATORY SETTING

The NEPA of 1969, as amended, established that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and aesthetically (emphasis added) and culturally pleasing surroundings (42 USC 4331[b][2]). To further emphasize this point, the FHWA, in its implementation of NEPA (23 USC 109[h]), directs that final decisions on projects are to be made in the best overall public interest considering adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

CEQA establishes that it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of aesthetic, natural, scenic and historic environmental qualities" (CA Public Resources Code [PRC] Section 21001[b])**.**

AFFECTED ENVIRONMENT

The project area is within the Mattole Valley, which lies between the King Range National Conservation Area and the Humboldt Redwoods State Park. The Mattole Valley is characterized by ridges and densely forested areas along with agricultural land uses along the valley floor near the Mattole River. The community of Honeydew is rural, with sparse residential properties, a general store, post office, and elementary school. The Mattole River is a prominent natural feature around which the community is built. The project area is not near a state scenic highway or other designated scenic corridor. The Mattole River is not a federal- or state-designated "Wild and Scenic" river (NPS 2009).

Honeydew Bridge on Mattole Road over the Mattole River was built in 1920 and is a single-lane structure composed of two green steel camelback truss spans on a concrete foundation. It was determined eligible for listing in the National Register of Historic Places (NRHP) in 2003 and is a historic property for compliance with Section 106 of the National Historic Preservation Act (NHPA; JRP Historical Consulting [JRP] 2013). The bridge's camelback truss construction makes it a rare and unique bridge type. It is one of only three bridges of this type in the state that is within a public roadway. Although the bridge has been subject to contemporary repairs, it has retained its historic integrity.

The area surrounding the bridge includes a corridor of riparian vegetation and mixed evergreen forest on the north side of Mattole River. There is a 150-foot-wide embankment on the south side of the river that contains sparse vegetation among sand and rocks. Evergreen trees and riparian vegetation occur along Mattole Road and Wilder Ridge Road south of the embankment. Parcels surrounding the bridge are zoned as agricultural with special building sites, and the parcel directly south of the bridge is zoned as community commercial, forestry recreation, and special building site (Humboldt County 2017).

Assessment Method

A Visual Impact Assessment (VIA) for the Honeydew Bridge Replacement Project (Stantec Environmental Consulting Inc. [Stantec] 2018) was completed in accordance with FHWA's

Guidelines for the Visual Impact Assessment of Highway Projects (FHWA 2015). The VIA documents potential visual impacts caused by the project and includes mitigation measures, strategies, or features to minimize the impact of project-related changes to the visual environment.

Visual Assessment Units and Key Observation Points

Visual assessment units (VAUs) are used in visual impact assessments to help define areas having their own distinct visual character and visual quality. They include the portion of an area visible or potentially visible from the project area or from which the project area may be seen within the boundaries of a viewshed. The viewshed is typically defined as what can be seen in 360 degrees from a single point of view. Viewsheds are characterized by key observation points (KOPs)—key locations from which viewers can see conditions in the VAU. The project area was divided into five VAUs based on similar visual character and views. A total of 16 KOPs were selected to represent aesthetic resources from various locations within the project area (Figure 2-3). Resource changes and viewer responses were analyzed at the KOP level in the VIA report (Stantec 2018). The findings of this assessment serve as the basis for the impact conclusions described at the end of this assessment. Following are summaries of each of the five VAUs used for the assessment of visual resource changes and viewer sensitivity:

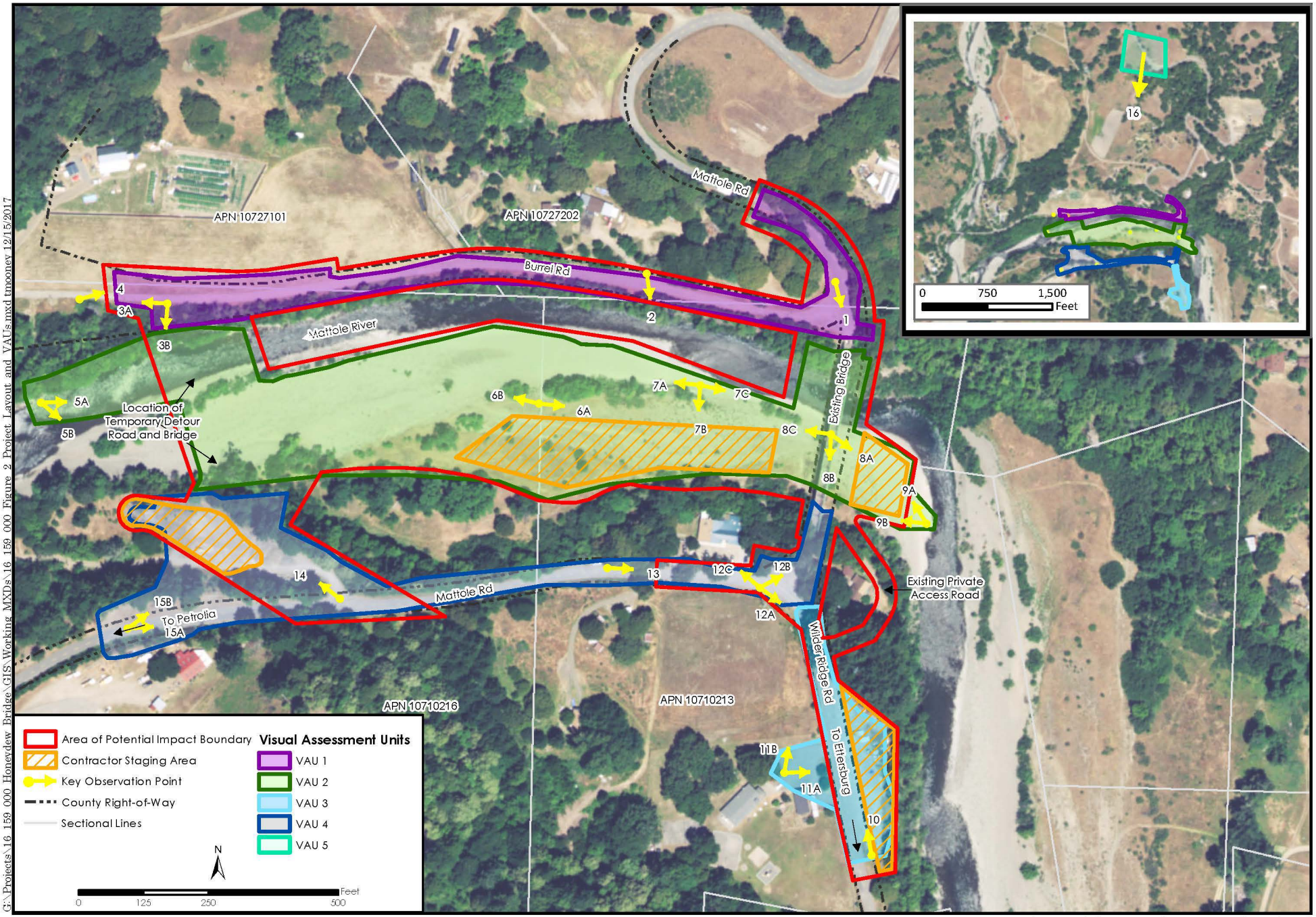
Visual Assessment Unit 1

VAU 1 is along Burrel Road and stretches from Mattole Road to the temporary detour bridge on the north side of the river. This VAU is characterized by the road corridor and vertical structure of vegetation and fences on either side. This VAU has limited views of surrounding areas, including the Mattole River, which is not visible. There are two residential properties on the north side of the VAU with chain-link or wooden fencing in front of each.

VAU 1 is dominated by the Burrel Road corridor. Views from this VAU show vertical elements including riparian vegetation south of the road and wooden and chain-link fences on the north side. Honeydew Bridge is visible from the eastern side of the VAU and generally blends in with the surrounding greenery. Honeydew Bridge is a unique and rare structure that creates a vivid view. Visual quality in VAU 1 is moderately high as pattern elements are generally harmonious and are relatively free of visual intrusions.

Visual Assessment Unit 2

VAU 2 is on the north side of the Mattole River approximately 1,600 feet downstream (west) of Honeydew Bridge in the vicinity of the proposed temporary bridge detour crossing. In this VAU, the river and its gravel banks are dominant landscape features, with riparian and montane hardwood-coniferous habitat along the riverbanks. Vegetation mostly limits views of the nearby roadways and surrounding peaks and ridgelines. A large gravel bank with scattered vegetation is present on the south side of the channel and the Honeydew Bridge is a noticeable and unique feature that passes over the river.



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Stantec

Honeydew Bridge Replacement Project

Figure 2-3
Project Layout and Visual Assessment Units

VAU 2 is within the Mattole River channel. Views show the Mattole River, riparian vegetation, and the Honeydew Bridge. Recreationists from this VAU see a pleasant scene with natural features and minimal visual intrusions. Visual quality is moderately high, and vividness is high due to views of the bridge, and pattern elements are harmonious and intact.

Visual Assessment Unit 3

VAU 3 includes approximately 560 linear feet of the Wilder Ridge Road corridor from its intersection with Mattole Road and extending south, a proposed construction staging area, and the Honeydew Elementary School parking lot, from which parts of the project construction area would be visible. Urban components including buildings, fences, utility infrastructure, vehicles, and stored materials are visible. A residence and a mature stand of conifers are near the northeast extent. Although it is outside of VAU 3, the Honeydew Country Store/Post Office is at the northwest corner of the Mattole Road/Wilder Ridge Road intersection. Honeydew Elementary School is adjacent to the southwest end of VAU 3, and a large gravel turnout currently used by residents for vehicle parking and materials storage is across from the school. This VAU contains limited views of the surrounding area due to the presence of roadside trees and buildings.

Views from VAU 3 are dominated by the Wilder Ridge Road corridor. Trees lining the roadway limit views of the surrounding area and the Mattole River. There are a high number of visual intrusions (such as fences, utilities, buildings, and vehicles) in the VAU. These features reduce the intactness and unity of the scene. Views are typical for the Honeydew area; therefore, pattern elements lead to a moderate level of visual quality for VAU 3.

Visual Assessment Unit 4

VAU 4 is characterized by the Mattole Road corridor and a relatively large gravel stockpile area. The VAU stretches from the intersection of Mattole Road and Wilder Ridge Road in the east to the western extent of the project area where Mattole Road would connect to the proposed temporary detour bridge. This VAU is dominated by the roadway, which slopes up toward the west and has mature trees lining the road, limiting views of the surrounding area, including the Mattole River. To the east a fallow grass field is present on the south side of Mattole Road and adjacent to the north end of the VAU is the Honeydew Country Store/Post Office and a private residence across the street. To the west is an agricultural residence on the south side of Mattole Road. Across the street from this residence is a lower elevation area off the road that is currently used to stockpile gravel. The temporary detour would be routed through this lower elevation area and would connect to the detour bridge and eventually back to Mattole Road via Burrel Road on the north side of the river. VAU 4 is dominated by the Mattole Road corridor. Views are typical for the area and show the roadway with tall trees lining the road, limiting views of the Mattole River and surrounding area. The Honeydew Bridge is partially visible at the eastern side of the VAU but blends in with the surrounding greenery. VAU 4 contains fairly harmonious views with limited visual intrusions, leading to a moderately high level of visual quality.

Visual Assessment Unit 5

VAU 5 was established to represent the general view of the project area from the widely scattered residences on the mountainous slopes north of Honeydew. Distant ridges and peaks are visible along with the Mattole River and human land uses in the valley.

VAU 5 shows an unobstructed view of the Mattole Valley with relatively few visual intrusions and natural features. The scene is aesthetically pleasing, and pattern elements are harmonious, leading to a moderately high level of visual quality.

Visual Resources and Resource Change

Resource change is assessed by evaluating the visual character and visual quality of the visual resources in the project area before and after the construction of the project. Resource change is one of two variables used to determine visual impacts (the other is viewer response).

Visual Resources

Visual resources are defined and identified by assessing visual character and visual quality of the project setting. Although the project area is not near a state scenic highway or other designated scenic corridor, and the Mattole River is not a federal- or state-designated “Wild and Scenic” river (NPS 2009), the historic Honeydew Bridge is a unique visual feature.

Visual Character

The visual character of a landscape is formed by the order of patterns such as form, line, color, and texture. Their interrelationships can be objectively described in terms of dominance, diversity, and continuity. Visual character is used to describe, not evaluate, these attributes; however, a change in visual character can be evaluated in the context of the viewer’s response to that change. Changes in visual character can be identified by how visually compatible a project would be with the existing condition by describing visual character attributes. Descriptors for attributes may include the following:

- Form - visual mass and shape
- Line - edges or linear definition
- Color - reflective brightness and hue
- Texture - surface coarseness
- Dominance - position, size, or contrast
- Scale - apparent size as it relates to the surroundings
- Diversity - a variety of visual patterns
- Continuity - uninterrupted flow of form, line, color, and texture

Project-related changes ascribed to these attributes help to describe the overall visual character of the setting and the project’s compatibility with it.

The visual character of the project would change the existing visual character of the Honeydew community. Although the existing bridge is a visual, human-created intrusion on the landscape,

its camelback truss construction makes it a unique feature, adding contrasting form, line, and diversity to the larger view. While the proposed replacement structure under Alternative 1 would be the most consistent with the existing visual character, the lower-profile bridge structures proposed under Alternatives 2 and 3 would allow for more open and expansive views of the Mattole River corridor and surrounding natural environment. The replacement bridge structures proposed under Alternatives 2 and 3 would change the visual character attributes currently associated with the Honeydew area and its bridge by introducing new features ranging from form to texture, and from dominance to continuity. Each of the proposed bridges would be wider and would require vegetation clearing around the north and south approaches, which would increase the visibility of the project within the landscape. This would lead to more exposed views of the Mattole River from adjacent uplands. New project features including the MBGR along Mattole Road would be minor visual intrusions, consistent with existing road infrastructure, and would not obscure any existing views. Construction-related impacts on the visual character would be temporary.

The Mattole Valley is the dominant landform in the region and contains views of steep ridges, gulches, hills dense forests, and the Mattole River. Elevations range from 1,700 msl along ridges to 200 feet msl along Mattole River at the base of the Mattole Valley. The steep topography and mature vegetation create a visual corridor with an open valley floor along the valley and restricted visual borders created by densely forested peaks and ridges. Along Mattole Road views of the surrounding valley and ridgelines are often blocked by tall hardwood trees. The area surrounding the bridge includes a corridor of riparian vegetation and mixed evergreen forest on the north side of Mattole River. There is a 150-foot-wide embankment on the south side of the river that contains sparse vegetation among sand and rocks. Evergreen trees and riparian vegetation occur along the Mattole Road and Wilder Ridge Road south of the embankment. Form, line, color, and texture of the existing setting are typical of other Humboldt County rural communities centered on river corridors. Dominating the visual setting are the forested uplands characterized by continuous, unified tree canopy extending above the viewer; the wide, cobbly river channel and floodplain; valley pasturelands; and the dispersed residential and commercial development and infrastructure, including roads and bridges. Structural, human-made forms such as the existing bridge and roadway are subordinate in both scale and dominance to the natural forms of the surrounding setting.

Visual Quality

Visual impacts are assessed by analyzing the project-related changes to visual quality (vividness, intactness, and unity) combined with the predicted viewer response (exposure, sensitivity) to those changes from the KOPs used to represent scenic resources within the project area. The three criteria used to evaluate visual quality are defined as follows:

- **Vividness** - The extent to which the landscape is memorable. Vividness is associated with the distinctiveness, diversity, and contrast of visual elements.

- **Intactness** - The integrity of the visual order in the landscape and the extent to which the existing landscape is free from non-typical encroaching intrusions.

- **Unity** - The visual harmony of the landscape as a whole; the degree to which the visual elements maintain a coherent visual pattern.

Resource Change

As described in greater detail in the project's VIA report, the overall resource changes that would result from implementation of the three build alternatives would be low. Each of the three build alternatives would follow the existing bridge and roadway approach alignments. Alternative 1 (Camelback Truss Bridge) would remain visually dominant at certain KOPs, as described in the VIA report. Alternatives 2 and 3, both lower-profile bridges, would change the visual character associated with the existing historic bridge, but the corresponding resource change would be limited in degree and extent.

Five VAUs were identified to represent the typical visual character of the project area and to illustrate the types of landscape features and the viewsheds associated with the project area. Within these five VAUs, a total of 16 KOPs were established as suitable baselines for the assessment of impacts on visual resources that could result from project implementation. While the extent of the viewshed varies by location (i.e., KOP), viewsheds throughout the project area are primarily characterized by dense riparian and surrounding evergreen forest vegetation, rural residential and commercial development, the Mattole River, and narrow road corridors.

Viewers and Viewer Response

Viewers are grouped into three categories for this study: (1) those who would have a view of the project activities from the road (travelers); (2) those who would have a view of the project activities from a perspective outside of the road corridor (neighbors); and (3) those that recreate within the Mattole River corridor (recreationists).

Travelers

This viewer group consists of roadway users, including tourists and commuters traveling by motor vehicle, bicycle, or pedestrian means. Tourists generally have a high sense of awareness of visual resources yet are often less sensitive to specific changes in the environment because of their transitory, non-residential nature. Commuter is a term used to describe travelers that routinely commute through an area for work, school, or other regular activities. Commuters are typically highly sensitive to scenic resource changes due to their routine exposure to the visual environment.

Neighbors

Neighbors consist of those viewer groups who have views of the project area from outside of the defined project area boundary. These viewers would be the most sensitive to scenic resource changes due to their daily exposure to, and familiarity with, the project area.

Recreationists

Recreationists include people participating in recreational activities such as fishing, swimming, hiking, and wildlife viewing. These viewers are typically sensitive to changes in scenic resources because of longer periods of exposure during their activity.

Viewer Sensitivity

Viewer sensitivity and response (public opinion) to changes in the visual character of a landscape as the result of a project serve as the basis for evaluating the impact of the project on scenic resources. Three attributes—activity, awareness, and local values—will influence the viewer's sensitivity to resource changes.

- **Activity** relates to the degree to which the viewer is either engaged in the surroundings or preoccupied with other stimuli. The more the viewer is observing the surroundings, the higher the level of sensitivity the viewer will have to changes to visual resources.

- **Awareness** relates to the focus of the view. The narrower the focus, the more specific the awareness to change.

- **Local values and attitudes** also affect viewer sensitivity. The pre-project value of the existing aesthetic or a specific visual resource to viewer groups will influence viewer sensitivity to visible changes, particularly if the resource has achieved local, state, or national significance (e.g., the historic Honeydew Bridge, which is eligible for listing in the NRHP and is a historic property for compliance with Section 106 of the NHPA).

Travelers

Tourists and others who have less familiarity, if any, with the existing bridge and surrounding views would most likely respond positively to the increased river views that would result from project implementation using any of the three alternatives. Also included in this viewer group are commuters, who frequently travel through the project area. Travelers would be sensitive to temporary visual changes due to construction and permanent changes associated with the new bridge.

Neighbors

Most neighbors in the project area and vicinity would be residents in the homes nearby. Other neighbors would include children attending Honeydew Elementary School and visitors to the Honeydew Country Store/Post Office. These viewers would be the most sensitive to scenic resource changes due to their daily exposure to and familiarity with the project area. Because the river corridor is densely lined with riparian vegetation, most views of the bridge and the river are obstructed; however, those neighbors who have residences in uplands, particularly on the hillside north of the river, would have fairly unobstructed views of the project area. These long-duration views would increase the potential for viewer sensitivity to changes in the existing aesthetic.

Recreationists

Recreationists typically are sensitive to changes in scenic resources because they have longer periods of exposure than other viewers, whether fishing, hunting, hiking, or wildlife viewing locally. In the project area, those recreationists participating in activities in the river and floodplain would be the most affected by the temporary and permanent changes associated with project implementation. Because recreational activities in this reach of the Mattole River are transitory or of relatively short duration, however, the overall impact on viewer sensitivity would be low.

Overall Viewer Response

Views to the Bridge: Viewer response and sensitivity of those looking into the project area from outside vantages would be most affected during construction. Construction activities would, however, be temporary. Permanent changes in the aesthetics associated with the new bridge (particularly under Alternatives 2 and 3) would be moderate for neighbors having unobstructed views from nearby residences, and low for other viewers.

Views from the Bridge: Viewer response and sensitivity of travelers would in general be low. Their exposure would be transitory in nature, and their exposure to the changes in the aesthetics of the new bridge would be short in duration.

ENVIRONMENTAL CONSEQUENCES

Federal Highway Administration Methodology

Under FHWA methods, adverse changes to visual resources (visual quality and visual character) in combination with anticipated viewer response (viewer sensitivity and exposure), are likely to result in an adverse visual impact.

Change to the Project Setting

Visual impacts are determined by assessing changes to the visual resources and predicting viewer response to those changes. These impacts can be beneficial or detrimental. Cumulative impacts and temporary impacts due to construction operations are also considered.

As described in greater detail in the VIA, the overall resource change resulting from the build alternatives would generally be low. Among the build alternatives, Alternative 1 would result in conditions that would be most similar to the existing aesthetic, because Alternative 1 proposes replacement of the existing bridge with a similar but more effective structure. Changes in visual quality would likely have the greatest impact on viewers sensitive to the loss of the historic bridge structure. Alternatives 2 and 3 would change the visual character by reducing the dominance of the new bridge structure in the surrounding natural setting (i.e., subordination of scale).

VISUAL IMPACTS DETERMINATIONS

All three build alternatives would follow the existing alignment of the Honeydew Bridge and its roadway approaches. The build alternatives would also use common construction criteria, including proposed staging areas and the temporary detour route. The differences between the build alternatives would be in the type of replacement bridge structure. Alternative 1 would replace the existing bridge with a structure having similar visual attributes (e.g., form, line, scale, dominance). Visual attributes associated with Alternatives 2 and 3, while similar to each other, would affect the existing aesthetic and visual character of the Mattole River corridor in Honeydew.

Determination of Impacts under CEQA

Project consistency with the significance criteria used in the current CEQA Guidelines (2019) was determined using the impact thresholds identified in Table A (Chapter 7) in the project's VIA (Stantec 2018). The project impacts on visual resources and aesthetics and the anticipated viewer response would be less than significant for the project as a whole. Table 2-7 summarizes the project's impacts and consistency with the current CEQA significance criteria.

Table 2-7. CEQA Guidelines Significance Criteria for Aesthetics and Visual Resources (2018)

Significance Criteria Issue	Project-Related Impact	Project Consistency
Would the project have a significant adverse impact on a scenic vista?	There are no scenic vistas in the vicinity of the project area.	No impact
Would the project substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?	The project proposes total replacement of the historic Honeydew Bridge—a structure that is eligible for listing in the National Register of Historic Places in 2003 and is a historic property for compliance with Section 106 of the National Historic Preservation Act (JRP Historical Consulting 2013). The bridge's camelback truss construction makes it a rare and unique bridge type. It is one of only three bridges of this type in the state that is within a public roadway. Although the bridge has been subject to contemporary repairs, it has retained its historic integrity. Its replacement is necessary because it does not meet modern transportation and safety standards. Alternative 1 would be the most similar in design to the existing bridge but would have a limited overhead clearance that makes this alternative inconsistent with the project's stated purpose and need. Alternatives 2 and 3 would be variations of a lower-profile concrete slab structure. Neither Alternative 2 nor 3 would include any visually unique features. Although Mattole Road is not a designated state scenic highway, the historic bridge is an important part of the visual character of the community. Its removal and replacement with a visually dissimilar structure would be a significant visual impact. However, it is anticipated that most viewers would acclimate to the new visual environment relatively quickly.	Significant Impact

Significance Criteria Issue	Project-Related Impact	Project Consistency
In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	The visual character of the community of Honeydew would change due to loss of its historic bridge and replacement with a modern structure; however, its replacement is needed for safety and practicality. The project was designed to minimize impacts to the extent practicable, including replacement within the existing bridge and road approach alignments. The proposed use of a lower-profile structure (such as proposed under Alternatives 2 and 3) would enhance views of the natural viewshed by reducing the appearance of the human-made structure. The County understands the importance of the existing bridge to the community and has included an interpretive commemorative monument in its project design.	Significant Impact
Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	The project would temporarily increase the potential for glare emanating from the project area during construction due to the presence of construction equipment and the removal of vegetation. Gravel material used to construct temporary work pads in the Mattole River floodplain would not substantially contribute to the potential for glare due to the relatively minor amount of additional material that would be temporarily deposited into the expansive floodplain. There would be some potential for additional glare to occur resulting from the permanent removal of vegetation to create the new bridge approaches; however, this would be a localized, seasonal occurrence. The project would not introduce any new light sources or materials prone to glare. Because it would follow the existing alignment, headlights of vehicles traveling through the area would result in no new impacts. Potential glare from vehicles using the temporary detour route would be buffered by surrounding vegetation, topography, and the absence of any sensitive receptors (e.g., residences) in line with the road.	Less than Significant

Determination of Impacts under NEPA

Although there are no specific standards for determining the significance of project impacts on visual resources and aesthetics under NEPA, the assessment of changes in visual quality as a result of project-related impacts on visual resources was determined based on the relationship of viewers with their visual environment and the project's potential to change the visual character of the environment. In a manner similar to a CEQA analysis, thresholds for significance, project compatibility, viewer sensitivity, and degree of impacts were identified for the purpose of this study as the NEPA criteria. The criteria were applied to determine whether overall project impacts on visual quality would be beneficial, adverse, or neutral. The determination of visual quality change is based on visual simulations and other images, and prevailing findings of qualitative resource changes summarized in Chapter 8 in the project's VIA report (Stantec 2018). Table 2-8 provides a summary of NEPA criteria, general project impact, and the anticipated effect that project-related changes to visual resources would have on viewers.

Table 2-8. NEPA Criteria Assessment of Visual Quality Change

Criteria	Project-Related Impacts	Visual Quality Change
Compatibility of impacts on visual resources	The project would replace the unique and historic camelback truss bridge with either a similar structure (Alternative 1) or one of two modern concrete slab structures (Alternatives 2 and 3). Alternative 1 would be the most consistent with the existing visual resource and aesthetics, but its overhead clearance limitations make it impracticable for the purposes of the project. Alternative 2 (Preferred Alternative) would be a modern, low-profile, concrete slab structure that would change the visual character of the community. Compared to Alternative 1, a structure of this type would be less intrusive on the landscape (i.e., less memorable) and would allow for expanded views of the surrounding landscape as viewed by the various viewer groups associated with the project. Because of the significant change in visual character and the sensitivity of some viewers to this change, replacement of the existing bridge with either Alternative 2 or Alternative 3 would result in an adverse change in visual quality. Replacing the existing bridge using Alternative 1 would be neutral; however, as previously described, this alternative would not be consistent with the project's purpose and need.	Adverse
Viewer sensitivity to impacts	The historic relevance of the existing Honeydew Bridge and its influence on the visual character of the local community would adversely affect some viewers. Commuters, particularly those having the greatest familiarity with the existing visual environment, neighbors with views of the project footprint, and recreationists who frequent to Mattole River corridor may be sensitive to visual changes. While temporary, construction-related visual impacts would be restored to pre-project conditions upon completion of construction, permanent changes in the visual character of the bridge and its approaches may be an adverse effect, depending on the selected project alternative.	Adverse
Degree of impacts	Overall, project-related impacts on visual resources and aesthetics would result from replacement of the existing, historic Honeydew Bridge with a modern, low-profile concrete slab structure such as those proposed under Alternatives 2 and 3. Although Alternative 1 would replace the existing bridge with a similar, but larger, structure, this alternative would not meet the stated purpose and need of the project, due to overhead clearance limitations. The Alternative 2 and 3 structures would permanently change the visual character of the existing view. Under all three action alternatives, areas temporarily affected by project construction would be restored to pre-project conditions. The degree of impacts on visual resources would be neutral under Alternative 1 and adverse under Alternatives 2 and 3. Changes to visual quality under Alternatives 2 and 3 would be similar.	Adverse

Summary of Project Impacts

The project would replace the unique and historic camelback truss bridge with either a similar structure (Alternative 1) or one of two modern concrete slab structures (Alternatives 2 and 3). Alternative 1 would be the most consistent with the existing visual resource and aesthetics, but its overhead clearance limitations make it impracticable for the purposes of the project. Alternative 2 (Preferred Alternative) would be a modern, low-profile, concrete slab structure that would change the visual character of the community. A low-profile bridge would be less intrusive on the landscape (i.e., less memorable) than a high-profile structure and would allow for expanded views of the surrounding landscape as viewed by the various viewer groups associated with the project. Because of the significant change in visual character and the sensitivity of some viewers to this change, replacement of the existing bridge with either Alternative 2 or Alternative 3 would result in an adverse change in visual quality. Replacing the

existing bridge using Alternative 1 would be neutral; however, as previously described, this alternative would not be consistent with the project's purpose and need.

Construction activities would be temporary visual intrusions. Vegetation clearing around staging areas and around the temporary detour bridge would open up views of the Mattole River corridor, which would increase the potential for glare from construction equipment and floodplain gravel. Under all three build alternatives, areas temporarily affected by project construction would be restored to pre-project conditions. Construction-related impacts on visual resources and aesthetics would be less than significant.

The project would temporarily increase the potential for glare during construction. Use and staging of construction equipment in the Mattole River floodplain and adjacent uplands could result in occurrences of temporary glare. Removal of vegetation, both permanently and temporarily, could also create new sources of glare by exposing more ground surface. However, because there would be no new lighting sources and the potential for glare would be dependent upon the angle of the sun as it passes over the project area and vehicle headlights, this impact would be less than significant. Nighttime views of the project area would be limited to natural light or artificial light sources such as headlights.

As summarized in tables 2.1.7-1 and 2.1.7-2, anticipated impacts on visual resources and aesthetics under CEQA and NEPA would be generally significant and adverse, respectively. However, these determinations are dependent on the selected build alternative. Regardless of the selected build alternative, the project would be consistent with Humboldt County's relevant General Plan policy summarized in Table 2-9.

Table 2-9. Project Consistency with Humboldt County Policies

Policy		Impact	Consistency Determination
Humboldt County General Plan			
Conservation and Open Space Element	**Goal SR-G1: Conservation of Scenic Resources.** Protect high-value scenic forest, agriculture, river, and coastal areas that contribute to the enjoyment of Humboldt County's beauty and abundant natural resources.	The project would only require a minor amount of vegetation to be removed for the new bridge and would not significantly permanently alter views or characteristics of the Mattole River. No high-value scenic landscapes would be altered by the project.	Consistent

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The following AMMs would be used during construction to reduce impacts on the visual environment:

- **AMM VIS-1:** Manipulate landscape components such as landform and vegetation to control the visibility of project actions from the more visibly sensitive areas, such as recreational locations along the Mattole River or the Honeydew Country Store/Post Office. Avoid tree removal in and adjacent to recreation sites.

- **AMM VIS-2:** Revegetate cut or fill slopes where trees were removed using native shrubs, grasses, and forbs, and replace riparian trees if any are removed from riparian areas as a result of construction.

- **AMM VIS-3:** Use construction materials that are visually compatible with the landscape (e.g., non-glare metal guard rails and low-chroma pavement consistent with colors found in the adjacent landscape). Use reflective road paint (if pavement is used) and highly reflective signs only as required by law.

- **AMM VIS-4:** Minimize road cut slope gradients to blend with the adjacent topography.

2.1.8. CULTURAL RESOURCES

REGULATORY SETTING

The term “cultural resources,” as used in this document, refers to the “built environment” (e.g., structures, bridges, railroads, water conveyance systems, etc.), places of traditional or cultural importance, and archaeological sites (both prehistoric and historic), regardless of significance. Under federal and state laws, cultural resources that meet certain criteria of significance are referred to by various terms including “historic properties,” “historic sites,” “historical resources,” and “tribal cultural resources.” Laws and regulations dealing with cultural resources include the following.

The NHPA of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the NRHP. Section 106 of the NHPA requires federal agencies to consider the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings, following regulations issued by the ACHP (36 CFR 800). On January 1, 2014, the First Amended Section 106 Programmatic Agreement (PA) among the FHWA, the ACHP, the California State Historic Preservation Officer (SHPO), and Caltrans went into effect for Caltrans projects, both state and local, with FHWA involvement. The PA implements the ACHP’s regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The FHWA’s responsibilities under the PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery Program (23 USC 327).

Pursuant to the finding of adverse effect determination made in the PA, a Memorandum of Agreement (MOA) between Caltrans and SHPO was formalized with ACHP for purposes of NHPA (Caltrans et al. 2019). The MOA is evidence that Caltrans has afforded ACHP the opportunity to comment on the project and indicates Caltrans’ commitment to take into account project effects on historic properties. Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the “use” of land from historic properties (in Section 4(f) terminology—historic sites). See Appendix A for specific information about Section 4(f) MOA between Caltrans, SHPO, and other ACHP signatories, including conditions specific to the treatment of historic properties, the area of potential effects, and discoveries and unanticipated effects.

An amended MOA between Caltrans and SHPO was issued on August 5, 2021 for changes to the project's APE (State of California – Natural Resources Agency 2021). Revisions to the APE became necessary to accommodate detour and work staging areas. The project description remained unchanged, and the APE revision solely involved relocating the proposed detour route and temporary bridge crossing to a location further downstream than what was originally proposed in the September 2013 map, which was used for the previous MOA. SHPO concurred with the new APE (Appendix A).

The CEQA requires the consideration of cultural resources that are historical resources and tribal cultural resources, as well as "unique" archaeological resources. PRC Section 5024.1 established the California Register of Historical Resources (CRHR) and outlined the necessary criteria for a cultural resource to be considered eligible for listing in the CRHR and, therefore, a historical resource. Historical resources are defined in PRC Section 5020.1(j). In 2014, AB 52 added the term "tribal cultural resources" to CEQA, and AB 52 is commonly referenced instead of CEQA when discussing the process to identify tribal cultural resources (as well as identifying measures to avoid, preserve, or mitigate effects to them). Defined in PRC Section 21074(a), a tribal cultural resource is a CRHR or local register eligible site, feature, place, cultural landscape, or object which has a cultural value to a California Native American tribe. Tribal cultural resources must also meet the definition of a historical resource. Unique archaeological resources are referenced in PRC Section 21083.2.

AFFECTED ENVIRONMENT

A Historic Property Survey Report (HPSR) for the Honeydew Bridge Replacement Project was approved by Caltrans in December 2013 (JRP 2013). The HPSR is a summary document that Caltrans uses to make cultural resource determinations for the project. The HPSR includes an Archeological Survey Report (Roscoe and Associates 2013) and a Historic Resources Evaluation Report (HRER). The ASR documents the findings of archeological study and demonstrates that a reasonable level of effort occurred to identify archeological resources within a 0.5-mile radius of the project's area of potential effect (APE). The APE includes the existing bridge, the 100-year floodplain including the bridge foundations and a portion of the riverbed immediately up- and downstream of the existing bridge, adjacent roads, and other properties that may be affected by project construction. Historical archeological resources and built environment resources are identified and evaluated in the HRER.

The discussion of cultural resources identified within the APE is split into two sections: Built/Architectural Resources and Archeological Resources.

Built/Architectural Resources

Survey and evaluation for built environment resources and historical archaeological resources that could be affected by this project included research for developing a general historic context relative to the project location, as well as resource-specific research for the subject property within the APE to confirm dates of construction, review its land use history, establish the property's physical history, and place the property into appropriate historic context. Cultural resource staff researched at the Humboldt County Historical Society, Humboldt State University Library Special Collections, Humboldt County Planning Department, Humboldt County

Recorder, University of California Davis Shields Library, the project archaeologist's (JRP) in-house library, and online sources. In addition, standard sources were researched including the California Historical Resources database, NRHP database, California Historical Resources Information System, and the Caltrans Historic Bridge Inventory. The records search did not identify any previously recorded or potential built environment historic resources in or near the APE (JRP 2013).

Cultural resources staff conducted a field survey of the APE on June 25, 2013 and recorded the property at 44670 Mattole Road (APN 107-102-013, the Honeydew Store and Post Office) on California Department of Parks and Recreation form 523; the series of forms used for recording and evaluating resources and for nominating properties as California Historical Landmarks**,** California Points of Historical Interest**,** and to the CRHR. No other buildings, structures, or objects in the APE requiring recordation were found (JRP 2013). Notification letters for the project were sent by cultural resources staff to potential local interested parties on May 24, 2013. No responses were received.

The APE includes two built environment properties: the Honeydew Store and Post Office building at 44670 Mattole Road (APN 107-102-013) and the Honeydew Bridge (Bridge 04C0055) (JRP 2013). While the store property was evaluated as a part of the cultural resources assessment effort for the project, it does not appear to meet the criteria for listing in the NRHP and is also not a historical resource for the purposes of CEQA. The Honeydew Country Store, at 44670 Mattole Road, was determined in January 2014 to be ineligible for NRHP listing. The project's record search found that the Honeydew Bridge was determined eligible for listing in the NRHP.

Honeydew Bridge over Mattole River (04C0055)

The Honeydew Bride is the sole historic property in the APE. This bridge was determined eligible for listing in the NRHP under Criterion C in 2003 as a result of the Caltrans Historic Bridge Inventory conducted in early 2000s. At the time, Caltrans concluded that the Honeydew Bridge is an excellent example of its type, period, and method of construction as a rare and important bridge type—the camelback truss. When evaluated, the bridge was one of only three of this type in the state on public roadways. The bridge's period of significance is 1920 (the year of construction) and, although contemporary repairs to the structure are evident (e.g., welded members in the portal cross frame), the structure retains sufficient historic integrity to convey its historic significance. The bridge has two steel, camelback, through-truss spans, and a single wood deck lane. Each span is 109 feet long. The structure's character-defining features are the two camelback trusses and substructure, along with the concrete seat abutments, single concrete pier, and timber deck and railings. The extant pressure-treated timber deck and railings replaced an earlier deck and railings; some of the replacements occurred in the 1990s (as noted in Caltrans' bridge inspection reports). Records indicate that new decking and railings can be considered as in-kind replacements and as such, they contribute to the bridge's character.

A Finding of Adverse Effect (FAE) document was prepared to evaluate the potential adverse effects of the proposed action on the Honeydew Bridge. On November 16, 2017, SHPO issued a letter concurring with Caltrans' determination in the FAE that Honeydew Bridge is eligible for

NRHP listing. Based on considerations for costs, liabilities, environmental impacts, and the potential for substantial delays, the County determined that retaining the existing bridge and building a new bridge at an alternative location is not a feasible option. Removing the existing bridge and constructing a new bridge on the existing alignment is considered the only feasible option. The FAE documents the variety of means used to inform and elicit public comments, and identify additional information pertaining to the history of the bridge. Outreach and consultation methods included letters, two public meetings (January 23, 2013 and March 1, 2017), and telephone calls. Parties consulted included SHPO, the Humboldt County Historical Society, the Clarke Historical Museum, the Mattole Valley Historical Society, and the Eureka Heritage Society. Native American groups identified by the NAHC were also contacted via letters and telephone calls in an attempt to identify and protect cultural resources.

Archaeological Resources

The ASR (Roscoe and Associates 2013), which is included as an attachment to the HPSR, assessed potential impacts of the project on archaeological or other cultural resources within a 0.5-mile radius of the project area.

Pre-field background research was aimed at obtaining information pertinent to the prehistoric and historical uses of the survey areas and to generate specific geographic information about archaeological resources in the vicinity. It also provided an understanding of the types of cultural resources that were likely to be encountered in the project APE. This research included an examination of historical maps, records, and published and unpublished ethnographic documents at the Humboldt County Historical Society and Humboldt State University Library, as well as the personal libraries of the ASR's author. A records search (IC file #12-1608) at the Northwest Information Center in Rohnert Park, California was conducted to determine whether previous cultural resources surveys were performed for, or recorded cultural resources are situated in, the APE. Cultural staff also reviewed the State Historic Resources Inventory, CRHR, and NRHP and conducted an interview with the Etter family—landowners at the project location for several generations.

A letter was sent June 18, 2013 to the Native American Heritage Commission (NAHC) requesting a search of the Sacred Lands Inventory File and a current list of local Native American groups and individuals who may have interests and/or concerns with the project. The NAHC responded on June 18, 2013 that the search of the Sacred Lands file did not indicate the presence of Native American cultural resources in the vicinity of the project area. Also included in the letter was a list of Native American contacts that may have knowledge of cultural resources in the project area. The following contacts included on the NAHC list were sent letters on June 27, 2013 requesting information and help in identifying and protecting cultural resources that could be affected by the project:

- **Bear River Band of the Rohnerville Rancheria:** Barry Brenard, Chairperson; Edwin Smith, Environmental Coordinator/Cultural; Erika Collins, Tribal Historic Preservation Officer (THPO)

- **Intertribal Sinkyone Wilderness Council:** Hawk Rosales, Executive Director

The Intertribal Sinkyone Wilderness Council did not respond to written letter, email, or follow-up phone calls (Roscoe and Associates 2013). Erika Collins, THPO for the Bear River Band of the Rohnerville Rancheria requested to accompany the field crew to the project area.

In addition to records pertaining to the historical significance of the Honeydew Bridge (as described previously in the discussion of built/architectural resources), the background research revealed the reported locations of two indigenous upper Mattole village sites several hundred meters upstream and downstream of the project's APE.

A pedestrian field survey of the APE was completed by cultural staff on June 27, 2013 (Roscoe and Associates 2013). Erika Collins, THPO for the Bear River Band of Rohnerville Rancheria was also present during the field survey. Neither of the village sites mentioned in the background research were relocated as part of the field study conducted for the project because of distance from the APE and information shared by the Etter family that indicated that one of these village locations was eroded away during the 1955 flood and again during the 1964 flood (Roscoe and Associates 2013). What remains today is a scoured gravel bar supporting recent growth of riparian vegetation. No archaeological resources were identified during the field investigation.

ENVIRONMENTAL CONSEQUENCES

As noted under Affected Environment, it was determined that the proposed action will have an adverse effect on a Built/Architectural resource, the Honeydew Bridge. A Memorandum of Agreement (MOA) was subsequently prepared to document the agreement between Caltrans, SHPO, the County, and the Mattole Valley Historical Society and executed on December 27, 2018. The MOA describes measures to mitigate for the adverse effect of replacing the historic bridge (the Mattole River/Honeydew Bridge, Bridge Number 04C-0055) on its existing alignment. The existing bridge was determined eligible for listing in the NRHP and is a historic property for compliance with Section 106 of the NHPA (JRP 2013). The MOA is included as Appendix C in Appendix A to this document.

No-Build Alternative

Under the No-Build Alternative the existing Honeydew Bridge would not be modified, and no construction would occur. There would be no impact on cultural resources.

Alternative 1 - Camelback Bridge

The effects of Alternative 1 on cultural resources in the project area and vicinity would be similar to those described for Alternative 2 (the Preferred Alternative).

Alternative 2 - Steel Girder Bridge (Preferred Alternative)

Despite the intensive identification effort employed during the investigation of cultural resources conducted for the project, no artifacts, features, sites, or other cultural resources were identified aside from the existing Honeydew Bridge. Based on the historical record, intensive survey effort, and good access to the horizontal and vertical sediment stratigraphy, at and near the project

APE, it is concluded that there would be little chance of encountering a significant buried archaeological site in this project area. Although the pedestrian investigation was thorough, it does not preclude the possible presence of small-scale archaeological features or artifacts. Because Alternative 2 would follow the existing alignment and no cultural resources were identified in the areas of temporary disturbance (i.e., temporary detour and staging), implementation of the project would have no effect on archaeological resources. Removal of the historic bridge would, however, be a significant, but unavoidable impact on a historical resource for the purposes of CEQA (Roscoe and Associated 2013). Under NEPA, SHPO concurred with Caltrans that removal of the bridge would result in a finding of adverse effect (Caltrans et al. 2019). Because the bridge is also eligible for NRHP listing under Criterion C it is, therefore, a historic property as defined in 36 CFR §800.16(I)(1). In addition, project implementation will be in accordance with Stipulation II of the MOA (Caltrans et al. 2019). The MOA formalizes an agreement with ACHP for purposes of NHPA (Caltrans et al. 2019). The MOA is evidence that Caltrans has afforded ACHP the opportunity to comment on the project and indicates Caltrans' commitment to consider project effects on historic properties.

An amended MOA between Caltrans and SHPO was issued on August 5, 2021 for changes to the project's APE (State of California – Natural Resources Agency 2021). Revisions to the APE became necessary to accommodate detour and work staging areas. The project description remained unchanged, and the APE revision solely involved relocating the proposed detour route and temporary bridge crossing to a location farther downstream than what was originally proposed in the September 2013 map, which was used for the previous MOA. SHPO concurred with the new APE (Appendix A).

Alternative 3 - Concrete Girder Bridge

The effects of Alternative 3 on cultural resources in the project area and vicinity would be similar to those described for Alternative 2 (the Preferred Alternative).

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

It is Caltrans' policy to avoid cultural resources whenever possible. Further investigations may be needed if archaeological sites, features, or other phenomena are discovered and cannot be avoided by the project. If buried cultural materials are encountered during construction, it is Caltrans' policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Additional survey will be required if the project changes to include areas not previously surveyed.

The following measures will be used to ensure that potential project effects on significant cultural resources are avoided or reduced to less-than-significant levels:

- **AMM CUL-1: Inadvertent Discovery of Cultural Resources.** If cultural resources, such as chipped or ground stone, historic debris, building foundations, or bone are discovered during ground-disturbance activities, work will be stopped within 20 meters (66 feet) of the discovery, per the requirements of CEQA (Title 14 California Code of

Regulations [CCR] 15064.5 (f)) and Section 106 (36 CFR 800.13). Work near the archaeological finds will not resume until a professional archaeologist who meets the Secretary of the Interior's Standards and Guidelines has evaluated the materials and offered recommendations for further action.

- **AMM CUL-2: Inadvertent Discovery of Human Remains.** If human remains are discovered during project construction, work will stop at the discovery location, within 20 meters (66 feet), and any nearby area reasonably suspected to overlie adjacent to human remains (Health and Safety Code, Section 7050.5). The Humboldt County coroner will be contacted to determine whether the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (PRC, Section 5097). The coroner will contact the NAHC. The descendants or most likely descendants of the deceased will be contacted, and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in PRC, Section 5097.98. Work may resume if NAHC is unable to identify a descendant or the descendant failed to make a recommendation.

2.2. Physical Environment

2.2.1. HYDROLOGY AND FLOODPLAIN

REGULATORY SETTING

Executive Order 11988

Executive Order (EO) 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The FHWA requirements for compliance are outlined in 23 CFR 650 Subpart A.

To comply, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments.
- Risks of the action.
- Impacts on natural and beneficial floodplain values.
- Support of incompatible floodplain development.
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values affected by the project.

The base floodplain is defined as "the area subject to flooding by the flood or tide having a 1 percent chance of being exceeded in any given year." An encroachment is defined as "an action within the limits of the base floodplain."

AFFECTED ENVIRONMENT

Information presented in this section is based on the *Summary Floodplain Encroachment Report* (Caltrans 2013) and the *Design Hydraulic Study for Bridge 04C-0055, Mattole Road Bridge over Mattole River at Honeydew Humboldt County* (Pacific Hydrologic 2020). In the vicinity of Honeydew, the Mattole River channel is winding, wide, shallow, and constrained to the northeast by a steep hillside. Lag (large immobile rock) is present in the channel but is likely to be displaced RSP. The northeast bank of the Mattole River is steep and consists of rock and colluvium with heavy vegetation above the riverbank. The southwest bank of the river is steep and consists of alluvial deposits with a cover of heavy vegetation. Uplands, where development has occurred, are characteristic of a wide, flat floodplain that has formed over time.

The flood of record for Mattole River near Petrolia is identified as 199,000-cfs occurring on December 22, 1964. Conditions in the river channel were not known at the time this high flow was estimated (peak flow was estimated from high water marks but the elevation of sediment in the channel was not known). Additionally, the Mattole River drains considerable area downstream of Honeydew and the distribution of flows between the reaches of the Mattole River during the particular flood event is not known. Therefore, a flood of record for the purposes of bridge design cannot be identified with confidence (Pacific Hydrologic 2020).

Watershed Description

The project area is in the 319,628-acre Cape Mendocino watershed, which is situated along the coast from Ferndale south to the edge of the King Range National Conservation Area (Figure 2-4). The Cape Mendocino watershed comprises three hydrologic areas or sub watersheds: Oil Creek watershed, Bear River watershed, and Mattole River watershed. Honeydew is in the Mattole River watershed, which is the largest of the three sub watersheds. It drains about 300 square miles of the northern California Coast Ranges between about 4,000 feet msl and sea level, in western Humboldt County and northernmost Mendocino County. The watershed drains northwestward, sharing divides with the Eel River to the east, Bear River to the north, and small drainages leading to the Pacific on the west. The Mattole River drains into the Pacific just west of Petrolia, about 30 miles south of Eureka. Primary uses include recreation, agriculture, and domestic and industrial water supply. The river's cold freshwater habitat is home to three federally listed as threatened anadromous salmonid species: Chinook and coho salmon and steelhead. Additionally, the summer run population of Northern California (NC) distinct population segment (DPS) steelhead is State listed as endangered.

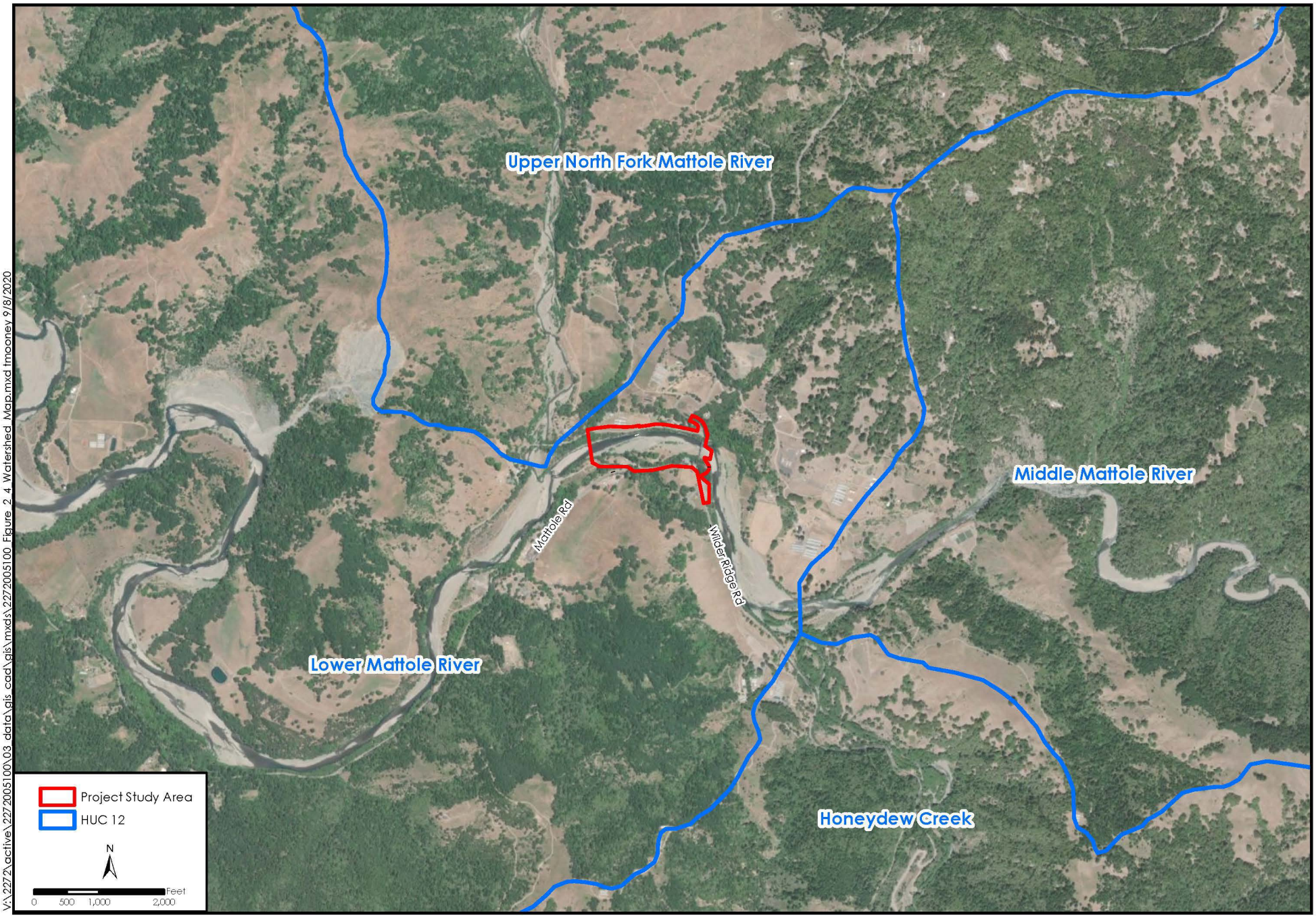
High winter rainfall on bedrock and other geologic units having low permeability and steep slopes contribute to the very flashy nature of runoff in the Mattole River watershed (Regional Board 2002). Extensive road systems and other land uses contribute to this runoff rate that when combined with high winter rainfall and rapid runoff on unstable soils delivers large amounts of sediment to tributaries and the Mattole River. Given the human-caused disturbances throughout the watershed and recognizing that the 1964 flood event was very unusual, it is likely that the Mattole River will continue to incise over time, especially if experiencing a period having multiple flood events of moderate magnitude, approaching a channel geometry similar to that identified at the time the existing bridge was designed (Pacific Hydrologic 2020).

The Mattole River watershed supports a mix of grassland and forestland. More than half of the watershed is occupied by trees. The distribution in tree sizes reflects the forest disturbance regime in the watershed. Post-World War II logging, wildfires, conversion of forestland to rangeland and back to forestland have all contributed to an abundance of relatively small trees (less than 12 inches in diameter at breast height).

Floodplain

The project area is within the Special Flood Hazard Area Zone A, which means no base flood elevations have been determined (Federal Emergency Management Agency [FEMA] 2016) (Figure 2-5). However, portions of the project area, specifically the channel, are in the 100-year floodplain. The Mattole River floods infrequently and has not been known to overtop Mattole Road (Pacific Hydrologic 2020).

In the project area, the Mattole River floodplain is roughly 300 to 550 feet wide. It is dominated by cobbles and silt, with a generally shallow active flow channel. Although vegetation in the channel is mostly absent, pockets of willows and other riparian shrubs and grasses have established below the OHWM of the scoured channel. Along the banks, riparian vegetation is dense.



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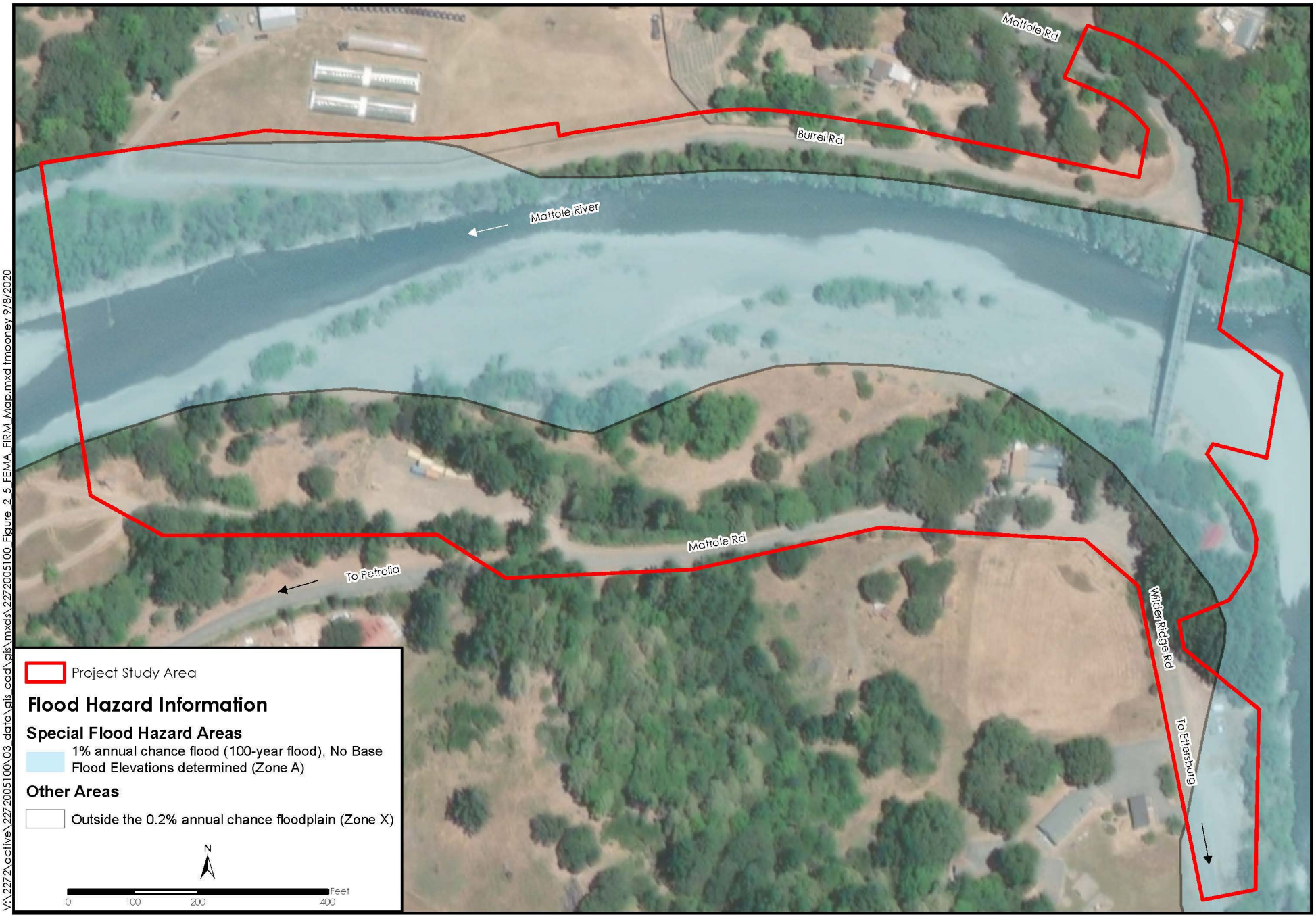
Honeydew Bridge Replacement Project

Stantec

Figure 2-4 Watershed Map



V:\2272\active\227200510003 data\gis cad\gis\mxds\227200510 Figure 2_5 FEMA FIRM Map.mxd tmooney 9/8/2020

Honeydew Bridge Replacement Project

Stantec

Figure 2-5 FEMA FIRM Map

ENVIRONMENTAL CONSEQUENCES

The analysis for this project was based partially on the *Design Hydraulic Study* (Pacific Hydrology 2020) and the project action alternative designs that were developed by the project engineer in collaboration with the County and Caltrans.

No-Build Alternative

Under the No-Build Alternative no improvements or modifications would occur to the existing bridge or road approaches. The existing bridge's soffit elevation is adequate for most flood scenarios but is approximately 3 feet lower than that of the replacement bridges proposed under the action alternatives. Although there would be no change in the potential for drift (e.g., uprooted trees and other debris) accumulations at the existing bridge, flooding potential created by the bridge would be higher under the No-Build Alternative than the action alternatives.

Alternative 1 - Camelback Truss Bridge

Construction and operational impacts on the Mattole River and its floodplain for Alternative 1 would be similar to those described for Alternative 2 (Preferred Alternative).

Alternative 2 - Steel Girder Bridge (Preferred Alternative)

Construction Impacts

The steel girder bridge structure proposed in Alternative 2 would involve the use of clean gravel work pads on either side of the channel to support construction equipment during bridge removal and construction. The gravel work pads would be removed before the October work deadline, and instream areas temporarily affected by construction would be returned to their pre-construction condition. The primary construction staging area to remove and replace the existing bridge would be along the south bank gravel bar a few hundred feet upstream of the existing bridge alignment.

During the second construction season, a temporary detour would be created over the Mattole River to maintain traffic circulation while the old bridge is dismantled, and the new bridge is erected in its place. The detour would have a direct impact on the channel because on-site river-run gravel fill would need to be graded to accommodate the temporary bridge and road approaches. Areas disturbed by the temporary detour will be returned to pre-construction conditions.

Because construction activities in the floodplain and active flow channel of the river would be temporary and occur during the summer low-flow period, there would be no or only minimal impacts on hydrology and the floodplain.

Construction Requirements

The replacement structure was designed for the HL93, Tandem, and P15 Permit Design vehicle loadings as specified in Caltrans Bridge Design Specifications, Seismic Design Criteria V1.6, and AASHTO 6th Edition. The hydraulic design criteria established in the Caltrans Local

Assistance Procedures Manual prescribe that the structure be capable of conveying the base or 100-year flood (Q100) and passing the 50-year flood (Q50) without causing objectionable backwater or excessive flow velocities or encroaching on through-traffic lanes. In addition, AASHTO requires at least 3 feet of freeboard (clearance) above the 50-year flood or flood of record level. According to the Hydrologic Analysis performed by Pacific Hydrologic, Inc., the minimum soffit elevation required to meet these criteria is 335.41 feet msl. There is a high potential for significant volumes of drift (e.g., uprooted trees and other debris) to be carried by the Mattole River during periods of high flow. The proposed bridge was designed to provide more clearance for drift than the minimum recommended.

Diking/diversion of surface water and sump pumping would be used to dewater the pier location. Temporary water pollution control measures will be used, including but not limited to dikes, basins, and ditches. Embankment material would be required for the approach roadway at the south end of the bridge. This fill would be located in the floodplain, but outside of the ordinary high-water channel of the Mattole River.

Temporary work pads and the detour route would be constructed with properly sized “fish rock” for salmon spawning or river-run gravel fill. The gravel used will be washed at least one time with a final cleanliness value of 85 or higher and will be free of oils, clays, debris, and organic material. This river rock will be rounded and uncrushed with no sharp edges. Clean, crushed angular gravel would be placed on top of the fish rock with geotextile fabric because fish rock does not hold together under heavy equipment.

The exact number, size, types, and depth of piles to be driven are indeterminate because the final design had not been selected to date. However, it is likely that a 10 x 57-foot H-pile would be driven to a depth of 30 feet for the north abutment (Abutment 1). Pier 2 would likely use two 7-foot-diameter CIDH and the south abutment (Abutment 3) would likely use two 48-inch CIDH. In addition, sheet piles may be required for the construction of the pier cap. Construction methods would involve the removal of the existing bridge and pier, and the construction of a new pier and bridge abutments. Construction of the project is expected to take two construction seasons due to the limited in-river work window (June–October). Work in the first season would involve construction of deep foundations for the new pier and installation of the south abutment. Installation of CIDH supports would not require bridge closure. Construction access to the river channel would be made through a private access road near the southwest corner of the existing bridge.

Design of the replacement bridge considered the findings of the project hydraulic study (Pacific Hydrologic 2020) scour analysis. Over the expected life of the proposed bridge, it is reasonable to expect the channel to have deepening or incision to an elevation of 292 feet msl, a depth of 12 feet below the existing bottom of channel. The maximum potential pier scour over the expected life of the replacement bridge is associated with full development of physical channel degradation. The preferred bridge would not constitute a significant contraction of the flood channel and is not expected to aggravate channel instability (Pacific Hydrologic 2020).

AMM HYDRO-1 and AMM HYDRO-2 described below will be used to avoid or minimize potential project impacts related to erosion and sediment controls and the accidental spill of pollutants, respectively.

Operational Impacts

No adverse operational impacts on hydrology or the Mattole River floodplain were identified for the Preferred Alternative. The preferred bridge would be within a channel reach that does not have flood risk mapped by FEMA. As such, projects may encroach into the floodplain to the extent they result in a 1.0-foot increase in the water surface elevation of the most probable 100-year flood provided the increase does not result in an increased risk of damage to structures or other negative impacts. Abutments of the preferred bridge will not redirect significant volumes of water from the floodplain to the channel during the most probable 100-year flood. The project hydraulic study (Pacific Hydrologic 2020) determined that the preferred bridge is expected to result in a 0.11-foot increase in water surface elevation during the most probable 100-year flood immediately upstream of the bridge, tapering to a 0.02-foot increase at a location approximately 3,000 feet upstream of the bridge. No structures would be affected by this increase; therefore, the minor increase in water surface elevation during the most probable 100-year flood does not reflect an increase in the risk of damage to structures.

Alternative 3 - Concrete Girder Bridge

Construction and operational impacts on the Mattole River and its floodplain for Alternative 3 would be similar to those described for Alternative 2 (Preferred Alternative); however, the use of the standard cast-in-place concrete box girder structure proposed under Alternative 3 would require temporary in-channel falsework. There would be no effects on hydrology or the floodplain resulting from project operation.

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

The project will be conducted in accordance with all federal, state, and local regulatory requirements previously described. In addition, the following AMMs will be incorporated into the project to minimize potential effects on water quality:

- **AMM HYDRO-1 - Erosion and Sedimentation Control:** Erosion control measures will be implemented during construction of the project in non-riparian, upland areas. Erosion control measures to be implemented by the County include the following:

    - Areas where wetland and upland vegetation need to be removed will be identified in advance of ground disturbance and the “area of disturbance” at each site will be restricted to only those areas necessary to accommodate construction features. Additionally, removal will be scheduled at least 48 hours before any forecasted precipitation event.

    - To the maximum extent practicable, activities that increase the erosion potential in the project area will 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. All bare mineral soil exposed in conjunction with construction, maintenance, or repair, will be treated for erosion before the onset of any rainfall event capable of generating runoff, or at the end of the yearly work period, whichever comes first. Channel access route(s) and areas designated for

equipment staging, maintenance, and fueling will be groomed, bermed, and treated with straw mulched and seeded as necessary to minimize the potential for the release of fine sediment to the stream(s) or nearby upland area(s). Erosion control criteria will consist of at least 2 to 4 inches of straw mulch and 100 pounds per acre equivalent barley seed in those instances when reseeding is applicable.

- BMPs, such as silt fences, straw wattles, or earthen berms, will be installed between staging areas or temporary material stockpiles and the stream bank to intercept sediment before it reaches the waterway. The BMPs will be installed before 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.

- If temporary spoil or construction material sites are used, they will be located such that they do not drain directly into the stream, if possible. If a spoils/material site may drain into a surface water feature, catch basins or berms will be constructed to intercept sediment before it reaches the feature. Temporary storage sites will be graded, vegetated, and mulched at end of project to reduce the potential for erosion.

- All construction debris associated with the project will be removed from the site and disposed of appropriately.

- Regular site inspections (monitoring) will occur the winter following each maintenance event, confirming that the appropriate BMPs are in place and functioning as intended. Inadequacies will be evaluated, and corrections made in a timely manner.

- A Construction Site Dewatering and Diversion Plan will be prepared, for approval by NMFS and California Department of Fish and Wildlife (CDFW), to guide any necessary clear water diversions to route surface water around the project area and provide methods to capture groundwater that enters the project area, pump it to suitable upland areas, and allow it to infiltrate such that turbid waters do not enter surface waters.

- If needed to resist high-velocity river flows, erosion barriers and containment of temporary gravel fill for approach pads and work pads to be constructed along the riverbank will be created using gravel-filled super sacks, concrete K-rails, sandbags, gabions wrapped in plastic sheeting, and other methods meeting Caltrans' Standard Specifications.

- **AMM HYDRO-2 - Prevention of Accidental Spills:** The release of hydrocarbon contamination (Total Petroleum Hydrocarbons or TPH) and other contaminants will be safeguarded against to the greatest extent feasible. If leaks or spills do occur, they will be controlled immediately. All spilled contaminants and contaminated soil will be recovered from the site and stored in County-approved containment vessels. All stored

contaminated or hazardous material will be removed from the site in a timely manner and disposed of at an approved hazardous waste disposal facility.

- The Contractor will develop a Site-specific Spill Prevention Plan that will be implemented for handling of potentially hazardous materials. The plan will 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 will be constructed to prevent spilled materials from reaching surface water features.

- Equipment and hazardous materials will be stored at an elevation above and at least 50 feet away from the OHWM.

- Vehicles and equipment used during construction will receive proper and timely maintenance to reduce the potential for mechanical breakdowns leading to a spill of materials.

- Any vehicles stored within 150 feet of the watercourse or drainage facilities will have spill prevention measures in place for refueling. This includes placement of an absorbent boom around the fuel port (on machine being fueled), as well as a thick absorbent mat that is rolled out on the ground under the equipment to catch a larger spill. When fueling vehicles and other equipment, there will be a person located at both the fuel nozzle and the truck valve so that emergency shut-off could be made if there was a nozzle or hose failure.

- All equipment remaining on the job site will have secondary containment placed beneath the drip zone when left overnight. Leaks will be immediately controlled with absorbent mats and repaired before equipment operates again. Cleanup of petrochemical drips will occur as soon as they are observed. All equipment will be monitored by the contractor daily for chemical leakage. To offer protection from storm events, Caltrans will require monitoring for storm events and the movement of equipment accordingly.

- Instead of conventional hydraulic fluids, non-toxic, bio-degradable vegetable oil will be used in hydraulic equipment working within 50 feet and below the OHWM of the river channel, as feasible.

2.2.2. WATER QUALITY AND STORM WATER RUNOFF

REGULATORY SETTING

Federal Requirements: Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States from any point source[2] unlawful unless the

[2] A point source is any discrete conveyance such as a pipe or a man-made ditch.

discharge complies with a National Pollutant Discharge Elimination System (NPDES) permit. This act and its amendments are known today as the Clean Water Act (CWA). The goal of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. The following are important CWA sections:

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.

- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).

- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the Regional Boards administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems.

- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

The USACE issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of the USACE's Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the USACE decision to approve is based on compliance with U.S. Environmental Protection Agency's (USEPA) Section 404 (b)(1) Guidelines (40 CFR Part 230), and whether the permit approval is in the public interest. The Section 404(b)(1) Guidelines (Guidelines) were developed by the USEPA in conjunction with the USACE and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences. According to the Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent[3]

[3] The USEPA defines "effluent" as "wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall."

standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4. A discussion of the LEDPA determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements

Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the CWA and regulates discharges to waters of the state. Waters of the State include more than just waters of the United States, and include features such as groundwater and surface waters that are not considered waters of the United States. Additionally, the Porter-Cologne Act prohibits discharges of "waste" as defined, and its definition is broader than the CWA definition of "pollutant." Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and Regional Board are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA and regulating discharges to ensure compliance with the water quality standards. Details about water quality standards in a project area are included in the applicable Regional Board Basin Plan. In California, Regional Boards designate beneficial uses for all water body segments in their jurisdictions and then set criteria necessary to protect those uses. As a result, the water quality standards developed for particular water segments are based on the designated use and vary depending on that use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants. These waters are then state listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-point source controls (NPDES permits or WDRs), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. Regional Boards are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollutant Discharge Elimination System (NPDES) Program

For local agency transportation projects off the State Highway System, the local agency (as owner of the land where the construction activity is occurring) is responsible for obtaining the NPDES permit if required and for signing certification statements (when necessary). Local agencies contact the appropriate Regional Board to determine what permits are required for their construction activity. The local agency is also responsible for ensuring that all permit conditions are included in the construction contract and fully implemented in the field.

Construction General Permit

Construction General Permit, Order No. 2009-2009-DWQ (adopted on September 2, 2009 and effective on July 1, 2010), as amended by Order No. 2010-0014-DWQ (effective February 14, 2011) and Order No. 2012-0006-DWQ (effective on July 17, 2012). The permit regulates storm water discharges from construction sites that result in a Disturbed Soil Area of 1 acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least 1 acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than 1 acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the Regional Board. Operators of regulated construction sites are required to develop Storm Water Pollution Prevention Plans (SWPPPs); to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective SWPPP. In accordance with the Department's Statewide Storm Water Management Plan and Standard Specifications, a Water Pollution Control Program is necessary for projects with Disturbed Soil Area less than 1 acre.

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the U.S. must obtain a 401 Certification, which certifies that the project will comply with state water quality standards. The most common federal permits triggering 401 Certification are CWA Section 404 permits issued by the USACE. The 401 permit certifications are obtained from the appropriate Regional Board, dependent on the project location, and are required before the USACE issues a 404 permit.

In some cases, the Regional Board may have specific concerns with discharges associated with a project. As a result, the Regional Board may issue a set of requirements known as WDRs under the State Water Code (Porter-Cologne Act) that define activities, such as the inclusion of

specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

Local Assistance

For local assistance projects off the State Highway System, local agencies may follow their local design standards, if they meet AASHTO standards. Because the local agency is the owner/operator of the transportation facility, the local agency is responsible for:

1. Obtaining all necessary permits, agreements, and approvals from resource and regulatory agencies (401/404, Encroachment, and U.S. Coast Guard Bridge Permit, etc.) before advertisement for construction.

2. Fully complying with the conditions of permits.

3. Achieving all performance standards.

4. Preparing all required reports.

5. Providing a copy of each permit to the Department's District Local Assistance office for recording in LP2000.

Permits are typically applied for following NEPA approval and when the design is far enough along to determine and calculate specific impacts. Because 2 to 3 months are normally required to process a routine permit application involving a public notice, local agencies are strongly encouraged to apply for permits as early as possible to allow enough time to obtain all necessary approvals before beginning construction. For large and complex projects, local agencies should request a "pre-application consultation" or informal meeting with the USACE during the early planning phase of their project, and coordinate with Caltrans District Local Assistance liaison to minimize the potential for delays later.

AFFECTED ENVIRONMENT

The Mattole River is included on the CWA 303(d) list of impaired waterways due to excessive sediment and high temperatures (Regional Board 2018). High winter rainfall on bedrock and other geologic units having low permeability and steep slopes contribute to the very flashy nature of runoff in the Mattole River watershed (Regional Board 2002). Extensive road systems and other land uses contribute to this runoff rate that when combined with high winter rainfall and rapid runoff on unstable soils delivers large amounts of sediment to tributaries and the Mattole River. Poor water quality conditions caused by excessive TMDLs have adversely affected anadromous fisheries found in the Mattole River and its tributaries, contributing to sharp declines in these populations and subsequent listing under the federal Endangered Species Act (FESA) (USEPA 2002). In response, a TMDL management program established water quality standards for the Mattole River and its tributaries. This program sets maximum levels of pollutants and the "allowable" amount of sediment and temperature in the waterway.

Development of management guidelines is the responsibility of the State of California with implementation by the North Coast Regional Board. In November 2004, the North Coast Regional Board adopted the Mattole River Sediment TMDL. In addition, monitoring programs and an action plan specific to the Mattole River Watershed have been incorporated into the North Coast Regional Board's Basin Plan (2018) to address water quality concerns.

The North Coast Regional Board's Basin Plan (2018), adopted for management of water quality in the North Coast region, defines beneficial uses of receiving waters, sets forth water quality objectives to protect and enhance these beneficial uses, and formulates water management programs to control discharges to these receiving water bodies. Existing (E) and proposed (P) beneficial uses[4] of the Mattole River Hydrologic Area include the following:

- Municipal and Domestic Supply (MUN) - E
- Agricultural Supply (AGR) - E
- Industrial Service Supply (IND) - E
- Industrial Process Supply (PRO) - P
- Groundwater Recharge (GWR) - E
- Freshwater Replenishment (FRSH) - E
- Navigation (NAV) - E
- Hydropower Generation (POW) - P
- Water Contact Recreation (REC-1) - E
- Non-Contact Water Recreation (REC-2) - E
- Commercial or Sport Fishing (COMM) - E
- Warm Freshwater Habitat (WARM) - P
- Cold Freshwater Habitat (COLD) - E
- Estuarine Habitat (EST) - E
- Wildlife Habitat (WILD) - E
- Rare, Threatened, or Endangered Species - (RARE) - E
- Migration of Aquatic Organisms (MIGR) - E
- Spawning, Reproduction, and/or Early Development (SPWN) - E
- Aquaculture (AQUA) - E

In some cases, water quality in the North Coast Region is sufficient to support, and sometimes enhance, the beneficial uses assigned to the Mattole River Hydrologic Area (North Coast Regional Board 2018). No significant surface water development has occurred in the Cape Mendocino Hydrologic Unit (HU No. 112.000), which is part of the region's North Coastal Basin. The Department of Water Resources has, however, identified two groundwater basins in this unit: Mattole River Valley and Honeydew Town Area (North Coast Regional Board 2018).

[4] The Regional Board determined existing and potential beneficial uses by assessing biological data, human use statistics, and through professional experience (North Coast Regional Board 2018).

ENVIRONMENTAL CONSEQUENCES

No-Build Alternative

Under the No-Build Alternative no improvements or modifications would occur to the existing bridge or road approaches. There would be no project-related impacts on water quality in the Mattole River, its tributaries, or community groundwater sources.

Alternative 1 - Camelback Truss Bridge

Construction and operational impacts on water quality and storm water runoff patterns in the Mattole River, its tributaries, and on community groundwater sources for Alternative 1 would be similar to those described for Alternative 2 (Preferred Alternative).

Alternative 2 - Steel Girder Bridge (Preferred Alternative)

Construction Impacts

Under Alternative 2, grading and earthmoving activities, riparian vegetation removal, movement of construction equipment throughout the project area, the addition of permanent fill to the Mattole River floodplain to create the new south end bridge approach, and the use of temporary fill materials to create the detour bridge crossing would temporarily increase the potential for sedimentation into receiving waters. Construction of the new concrete bridge pier could temporarily change the pH of the Mattole River downstream of the project area.

Instream construction activities required under Alternative 2, including installation of the temporary detour bridge crossing and construction of the new bridge's central support pier, could result in the discharge of fine sediment to points downstream of the project site. High concentrations of fine sediment in channel substrate can deter salmonids from spawning in historical spawning areas. The deposition of fine sediment can also affect benthic macro-invertebrates. This occurs when fine sediment fills substrate interstices, which in turn decreases the availability of habitat for invertebrates. Decreased benthic invertebrate populations can result in a decline in food resources for juvenile salmonids.

Sediment deposition can be greatly reduced by conducting work during the low-flow period. Suspended fine sediment in low-flow, low-velocity settings tend to settle out in a relatively short period of time and distance, thereby limiting affects to the work zone and possibly the stream channel immediately downstream of the project site. Project construction activities would be conducted in accordance with regulatory requirements described above. Because instream work would occur when flows are at the seasonal low point, isolating work zones—those areas where disturbances to the wetted channel would occur—using a barrier such as silt fencing, a turbidity curtain, or steel plates is a proven method of confining fine sediment to the immediate area of disturbance. Following removal of the barrier, the first storm-generated flush of the season may result in a short-term rise in turbidity levels. Because most North Coast streams typically deliver high volumes of sediment during elevated flow events, especially first-of-the-season events, it is likely that flushing of sediment associated with the project would occur when local streams are already in a somewhat turbid state. It is anticipated that minor increases in

total suspended sediment levels would be generated by the project during first-of-the-season storm events.

Implementation of Alternative 2 would have no adverse effect on designated beneficial water uses.

Construction requirements

Construction of Alternative 2 would be done in accordance with Caltrans' BMPs and the regulatory measures previously described. Temporary and permanent fill materials that would be used in the floodplain or the active flow channel would meet or exceed required construction standards. In addition, work below Mattole River OHWM would be limited to a strict work window timed to avoid rainfall (typically June through October).

Temporary work pads and the detour route would be constructed with properly sized "fish rock" for salmon spawning or river-run gravel fill. The gravel used will be washed at least one time with a final cleanliness value of 85 or higher and will be free of oils, clays, debris, and organic material. This river rock will be rounded and uncrushed with no sharp edges. Clean, crushed angular gravel would be placed on top of the fish rock with geotextile fabric because fish rock does not hold together under heavy equipment.

Diking/diversion of surface water and sump pumping would be used to dewater the pier location. Temporary water pollution control measures will be used, including but not limited to dikes, basins, and ditches. Embankment material would be required for the approach roadway at the south end of the bridge. This fill would be located in the floodplain, but outside of the ordinary high-water channel of the Mattole River.

Fueling or maintenance of construction vehicles would occur in the project area during construction, and the risk of accidental spills or releases of fuels, oils, or other potentially toxic materials would exist. An accidental release of these materials could pose a threat to water quality if discharges were to enter culverts, the South Fork of the Eel River, its tributaries, or groundwater. The magnitude of the impact from an accidental release would depend on the volume and type of material spilled.

AMM HYDRO-1 and AMM HYDRO-2 described in Section 2.2.1, Hydrology and Floodplain; and mitigation measures MM WET-1 through MM WET-4 described in Section 2.3.2, Wetlands and other Waters, will be used to minimize potential project effects on water quality.

Operational Impacts

No adverse operational impacts on water quality and storm water runoff patterns were identified for the Preferred Alternative. Although the impervious surfaces created by the wider bridge deck and roadway approaches could generate some additional runoff during precipitation events, the effect would be negligible due to the relatively small size of the affected area. Runoff collected from the bridge deck would be directed to the bridge approaches where it would then sheet flow down the side slopes to the river floodplain.

Alternative 3 - Concrete Girder Bridge

Construction and operational impacts on water quality and storm water runoff patterns in the Mattole River, its tributaries, and on community groundwater sources for Alternative 3 would be similar to those described for Alternative 2 (Preferred Alternative).

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

The project will be conducted in accordance with all federal, state, and local regulatory requirements previously described. In addition, AMM HYDRO-1 and AMM HYDRO-2 described in Section 2.2.1, Hydrology and Floodplain; and mitigation measures MM WET-1 through MM WET-4 described in Section 2.3.2, Wetlands and other Waters, will be used to minimize potential project effects on water quality.

2.2.3. GEOLOGY/SOILS/SEISMIC/TOPOGRAPHY

REGULATORY SETTING

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects “outstanding examples of major geological features.” Topographic and geologic features are also protected under the CEQA.

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. Structures are designed using the Department’s Seismic Design Criteria. The Seismic Design Criteria provide the minimum seismic requirements for highway bridges designed in California. A bridge’s category and classification will determine its seismic performance level and which methods are used for estimating the seismic demands and structural capabilities. For more information, please see the Department’s Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

AFFECTED ENVIRONMENT

This section describes the local geology, slope stability, ground settlement, soils, grading, and regional seismic conditions in the study area based on the following reports:

- *Hazardous Waste Initial Site Assessment/Preliminary Site Investigation* (WRECO 2021)
- *Preliminary Geotechnical Reconnaissance Report* (Taber Consultants 2012)

There are 11 geomorphic provinces in California as defined by the California Geological Survey. Geomorphic provinces are geologic regions with distinct landforms and geology. The project area is within the Coast Ranges geomorphic province. The Coast Ranges are a series of relatively low mountain ranges and associated valleys that trend northwest, subparallel to the active San Andreas Fault (California Geological Survey 2015). Elevations typically range between 2,000 and 4,000 msl, but sometimes reach 6,000 feet msl. The Coast Ranges are predominantly composed of thick late Mesozoic and Cenozoic (250 million years ago to present)

sedimentary rocks. There are two parts to the Coast Ranges province, the northern and the southern, separated by a depression containing the San Francisco Bay.

Formation of the Coast Ranges occurred during an ancient period of subduction and a subsequent regime of sideways deformation that persists today. The rocks of the Coast Ranges (referred to as the Franciscan Complex) formed as a massive pile of rock and sediment in an ancient subduction zone. The bulk of the formation is a sheared matrix with large blocks of various rock types (mélange). Adjacent enclosed blocks exhibit distinctively different metamorphic histories. Pieces of the former subducting oceanic plate, known as the Coast Range ophiolite, are scattered throughout the province. (California Geological Survey 2015)

The surrounding hills are mapped as undifferentiated Cretaceous marine, described as graywacke and shale (Taber Consultants 2012). The undifferentiated Cretaceous marine rocks likely underlie the project site at depth. Test borings for a previous geotechnical study (Taber report dated August 10, 1960) for the Burrell Road Bridge at Upper North Fork Mattole River, which is approximately 2,000 feet downstream of the current project site, showed sheared shale at approximately 18 and 28 feet below ground surface (bgs) overlain by sand, gravel, and cobbles (Taber Consultants 2012).

TOPOGRAPHY

The Mattole River floodplain in the project area is broad with a low gradient, east-west alignment. The active low-flow channel is shallow with a very steep cut bank slope ascending into uplands on the north bank, against which it is aligned. The south side of the floodplain exhibits a distinct point bar that is wide, fairly flat, and below the OHWM. A large cone-shaped, in-channel scour hole has formed on the southern side of the existing bridge pier and extends from near the upstream edge of the pier to approximately 30 feet downstream. This scour hole is approximately 22 feet wide.

Above the OHWM, the south bank is characterized by a steep slope upwards into the adjacent valley uplands. The average slopes into uplands on both sides of the river are approximately 2h:1v (horizontal:vertical) near the bridge abutments, becoming less steep both up and down stream (Taber Consultants 2012). An access road to the bar occurs upstream of the bridge where the slopes are more moderate. Surrounding land is level to gently rolling on the southern side of the channel, forming a wide terrace between the river and the surrounding hills. On the north side of the channel, a smaller terrace exists immediately adjacent to the river, with steep sloped hills beginning within a few hundred feet of the northern abutment locations. The average elevation of the project area is approximately 360 feet msl.

STRATIGRAPHY/SOILS

Four soil map units occur in the project area (Natural Resources Conservation Service [NRCS] 2019). These map units are summarized in Table 2-10 and shown in Figure 2-6. Soil physical properties are described in detail in the *Preliminary Geotechnical Reconnaissance Report* (Taber Consultants 2012).

Table 2-10. Soil Map Units in the Project Area

Map Unit Name Taxonomy	Map Unit Reference Code	Drainage Class	Depth to Restrictive Layer	Hydric Soils
Water and Fluvents, 0 to 2 percent slopes	100	Somewhat excessively drained	More than 80 inches	Yes
Parkland-Garberville complex, 2 to 9 percent slopes	151	Moderate to well-drained	More than 80 inches	No
Conklin, 0 to 2 percent slopes	153	Well-drained	More than 80 inches	No
Crazycoyote-Windynip-Caperidge complex, 15 to 50 percent slopes	569	Well-drained	More than 80 inches	No

Soils at both planned abutment locations are moderate to highly corrosive to concrete and steel (NRCS 2019). No data was available for the bent locations. The soils in this area will be tested for corrosivity before construction.

The channel exhibits signs of local scour near the central pier and likely erosion along the northern bank. However, overall degradation of the channel did not appear to be occurring.

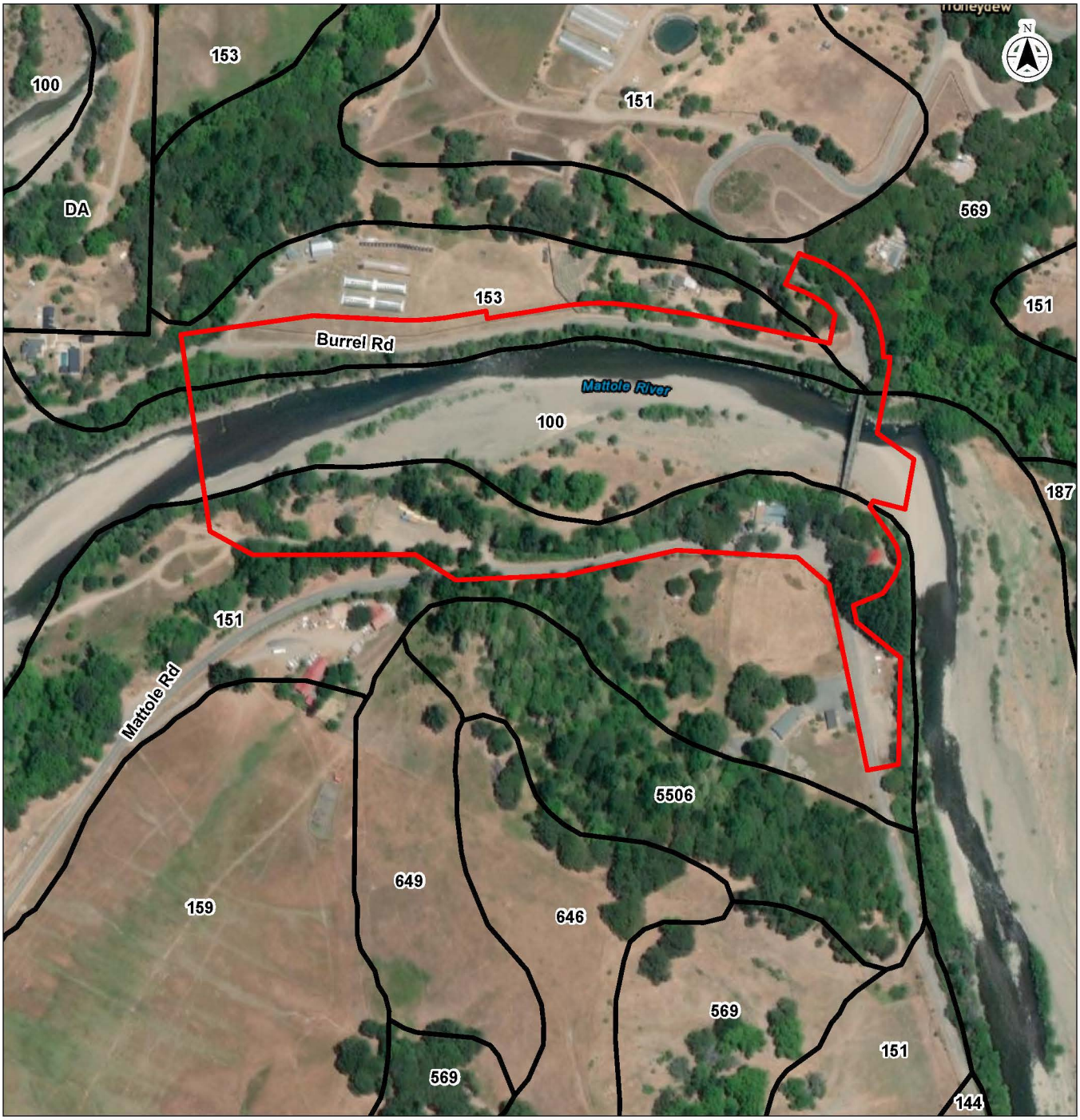
Three geotechnically important units occur in the project area: an upper recent alluvium unit, a middle older alluvium unit, and a lower compact older alluvium unit. The soil materials at the abutment locations are likely similar but are mapped as consisting of terrace deposits at the surface, which likely are more consolidated than the recent alluvium.

Recent Alluvium

Near the existing pier location, the material observed at the surface and interpreted to extend to approximately 11 feet below the existing surface is recent alluvium. This material is loose to very loose and consists of sand, gravel, and cobbles with minor clay. Abundant cobble-size clasts were found in areas forming an armor in places. Boulder size clasts were observed in the wetted channel and appeared to be on the order of 4 to 6 feet in diameter, but these may be displaced riprap from the north bank. It is likely that cobble and possibly boulder-size clasts also exist throughout the recent alluvium.

Older Alluvium

Below the recent alluvium to a depth of approximately 77 feet near the existing pier location, a layer of low to moderate seismic velocities was indicated by the refraction and multi-channel analysis of surface waves sounding. This layer may represent the terrace deposits mapped near the abutments. Based on recorded seismic wave velocities this layer is likely alluvium that is somewhat more consolidated than the recent alluvium. It is likely that this unit is composed of similar materials to the recent alluvium; abundant sand, gravel, and cobbles are expected.



Study Area (28.10 acres)

Soil Map Units

Soil Map Units in the Study Area
100 - Water and fluvents, 0 to 2 percent slopes
151 - Parkland-Garberville complex, 2 to 9 percent slopes
153 - Conklin, 0 to 2 percent slopes
569 - Crazy Coyote-Windkynip-Caperidge complex, 15 to 50 percent slopes

0 100 200 300 400 Feet
1 inch = 400 feet (At page size of 8.5"x11")

Stantec

Project Location
Humboldt County, California

2272005100
Prepared by ST on 2020-06-17

Client/Project
Humboldt County
Honeydew Bridge Replacement Project

Figure No.
2-6

Title
Soils

Notes
1. Coordinate System: NAD 1983 StatePlane California I FIPS 0401 Feet
2. Base map: ESRI Workld Imagery web mapping service
3. Source: Natural Resources Conservation Serivce 2020.

V:\2272\active\2272005100\03_data\gis_cad\gis\mxds\2272005100_Figure 2_Soils.mxd Revised: 2020-06-17 By: stona

Compact Older Alluvium

Below the older alluvium, a layer of moderate seismic velocity was indicated by refraction and multi-channel analysis of surface waves sounding. This layer is likely partially consolidated older alluvium and likely underlies the entire site.

SURFACE WATER

The project site is in the Cape Mendocino hydrologic unit within the Mattole River hydrologic area (hydrologic sub-area 112.30) roughly 0.5 mile upstream of the confluence with the Upper North Fork Mattole River and 26 river miles from the mouth of the Mattole River as it empties into the Pacific

Ocean. The Mattole River is the only natural surface water present within the project site. Hydrologic process associated with the river are snow melt, precipitation, and groundwater. The river is temperature and sediment impaired as a result of past timber harvest, removal of riparian vegetation, widespread streamside landslides, and channel aggradation resulting from seismic and large rainfall events. The Mattole River supports adjacent riparian wetlands and is a traditional navigable water. It generally flows from the southeast to northwest with large meanders in the vicinity of the project area.

GROUNDWATER

Groundwater can be expected to be near the river level in the channel area and is likely controlled by the river. Typically, groundwater elevation roughly parallels surface topography; groundwater elevations are expected to rise away from the river as the terrain ascends. Groundwater level is expected to be influenced by seasonal precipitation, fluctuations in river levels, and possibly other factors. No seepage or springs were observed during the project's wetland delineation (Stantec 2017).

There are no recorded observation wells near the project location according to the California Department of Water Resources Water Data Library (2017a). A review of local cleanup site records on the SWRCB GeoTracker Database (2021) indicated that the minimum depth to groundwater ranged from approximately 9 feet to approximately 16 feet bgs near the Honeydew store. Groundwater flows northerly to northeasterly toward the Mattole River (WRECO 2021). No specific groundwater studies or potentiometric maps were found for the area around the project.

GEOLOGIC HAZARDS

Seismic Hazards

Liquefaction

Soil liquefaction is a phenomenon in which the strength and stiffness of a soil is reduced by earthquake shaking or other rapid loading. Liquefaction occurs in saturated soils when the pore spaces between individual soil particles are completely filled with water. This water exerts a

pressure on the soil particles that influences how tightly the particles themselves are pressed together. Before an earthquake, the water pressure is relatively low. Earthquake shaking can, however, cause the water pressure to increase to the point where the soil particles can readily move with respect to each other. When liquefaction occurs, the strength of soils decreases, and the ability of soils to support foundations for buildings and bridges is reduced.

The potential for liquefaction to occur in soils mapped within the project area is generally low; however, based on the plasticity index for soils associated with the Mattole Road corridor on the north side of the river up to and including the northern bridge approach and hillsides to its east (i.e., the Crazycoyote-Windynip-Caperidge complex) the liquefaction potential is moderate to moderately high due mainly to a slow rate of water transmission (NRCS 2019).

Strong Ground Shaking

The nearest fault zones are the Whale Gulch fault, known to have late Quaternary activity, and the King Range Thrust Zone, which has undifferentiated Quaternary activity. Both of these faults are shown to be overlapping roughly parallel at a distance of approximately 2 miles to the southwest of the project site (Taber Consultants 2012). The San Andreas Fault (Shelter Cove) is approximately 8 miles to the south and is known to have ruptured in 1906 (Taber Consultants 2012).

The Caltrans online acceleration response spectra tool shows the Honeydew-Whale Gulch-Bear Harbor fault zone approximately 2.2 miles to the southwest with a maximum magnitude of 6.7 (Crawford and Associates, Inc., and Taber Consultants 2020). Other active or potentially active faults are farther away from the project site, including the Petrolia Thrust Fault to the northwest and the Briceland Fault to the northeast. Other faults are mapped in the local area but are not shown as potentially active; the closest is the Mattole Fault Shear Zone, which is shown approximately 1 mile southeast of the project site (Taber Consultants 2012). No faults are shown crossing in or near the project site and the site is not within an Alquist Priolo Fault Hazard Zone. However, the presence of these regional faults, some of which are known to be active, suggests a potential for strong ground shaking in the project area in the event of an earthquake.

Faults

The nearest fault zones are the Whale Gulch fault, known to have late Quaternary activity, and the King Range Thrust Zone, which has undifferentiated Quaternary activity. Both of these faults are shown to be overlapping roughly parallel approximately 2 miles southwest of the project site (Taber Consultants 2012). The San Andreas Fault (Shelter Cove) is approximately 8 miles to the south and is known to have ruptured in 1906 (Taber Consultants 2012).

The Caltrans online acceleration response spectra tool (2017b) shows the Honeydew-Whale Gulch-Bear Harbor fault zone approximately 2.2 miles to the southwest with a maximum magnitude of 6.7. Other active or potentially active faults are farther away from the project site including the Petrolia Thrust Fault to the northwest and the Briceland Fault to the northeast. Other faults are mapped in the local area but are not shown as potentially active; the closest is the Mattole Fault Shear Zone, which is shown approximately 1 mile southeast of the project site

(Taber Consultants 2012). No faults are shown crossing in or near the project site and the site is not within an Alquist Priolo Fault Hazard Zone.

Fault Rupture

There are no earthquake faults in the project area (Taber Consultants 2012); therefore, there is no potential for surface fault rupture in the project area.

Slope Stability and Landslides

The Honeydew area is mapped as being susceptible to deep landslides on the north side of the Mattole River due to weak rocks and/or steep slopes but has no susceptibility on the south side of the river. However, there are no recorded occurrences of active or historic landslides in the project area or immediate vicinity (California Department of Conservation 2019). As previously described, the project area is within the Mattole Valley. Outside of the Mattole River channel, the surrounding landform is gently rolling on the southern side of the Mattole River channel, ascending steeply northeast of the Mattole Road northern bridge approach. (California Department of Conservation 2019). The potential for slope instability to result in landslides specifically within the project area is low, but increases outside of the project area to the north.

Tsunami and Seiches

A tsunami is a large ocean wave associated with a seismic event. The project area is more than 11 miles from the Pacific Ocean and has not been mapped as a tsunami inundation zone (California Geological Survey 2021). The project area is not susceptible to tsunami inundation.

Non-Seismically Induced Earth Movement

Settlement and Subsidence

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage, or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. There is no potential for subsidence to occur in soils found in the project area (NRCS 2019). The project area is not susceptible to settlement and subsidence.

Expansive Materials

Expansive soils are soils that contain water-absorbing minerals, mainly “active” clays (e.g., montmorillonite). Such soils may expand by 10 percent or more when wetted. The cycle of shrinking and expanding exerts continual pressure on structures, and over time can reduce structural integrity. Soil susceptibility to expansion (i.e., shrinking and swelling) is tested using Uniform Building Code Test Standard 18-1. If the linear extensibility is more than 3 percent, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

As shown in the physical soil properties table provided in Appendix D of the *Preliminary Geotechnical Reconnaissance Report* (Taber Consultants 2012), the linear extensibility of soils

in the project area ranges from low to moderate. In the project area, the moderate ratings (>3 percent) occur in soils south of the Mattole River channel.

Erosion

Soils erosion rates are driven by wind and water. The “K” factor value, which factors the erodibility of the whole soil (Kw) and the erodibility of the fine-earth fraction (Kf), ranges from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible soil is to sheet and rill erosion by water.

As shown in the physical soil properties table provided in Appendix D of the *Preliminary Geotechnical Reconnaissance Report* (Taber Consultants 2012), the K factor of soils in the project area ranges from very low to moderate. In the project area, the more moderate ratings occur in soils south of the Mattole River channel.

ENVIRONMENTAL CONSEQUENCES

No-Build Alternative

Under the No-Build Alternative no improvements or modifications would occur to the existing bridge or road approaches. Scour of the bridge’s pier would continue unabated, threatening its structural integrity and decreasing public safety. In addition, the existing bridge does not meet modern structural seismic requirements, making it susceptible to damage due to seismic events.

Alternative 1 - Camelback Truss Bridge

Construction and operation of the project proposed under Alternative 1 would require geologic, soils, seismic, and topographic considerations similar to those described for Alternative 2 (Preferred Alternative).

Alternative 2 - Steel Girder Bridge (Preferred Alternative)

Construction Impacts

Potential temporary impacts on the geological environment could occur as a result of cut and fill operations required to create the new roadway bridge approaches. The clearing of vegetation, placement of fill, and ground-disturbing excavation and grading activities would alter the existing environmental conditions, thus increasing the risk of erosion on exposed steep slopes and other disturbed areas. However, use of erosion control measures as required by Caltrans and adherence to all requirements set forth in the NPDES permit required for construction actions would address any potential construction-related erosion and siltation impacts.

Alternative 2 would also be constructed according to current design standards and would be able to withstand typical bedrock accelerations and site-specific geologic and soil conditions. A more detailed geotechnical investigation would be conducted during the final design phase and would include standard measures to minimize potential impacts. Therefore, construction of Alternative 2 would not result in impacts on the existing risk of seismic activity in the project area, or impacts related to the exposure of the public to existing geology or soil hazards.

Construction Requirements

Construction requirements for Alternative 2 will consider the following:

- The site is considered adequately stable and foundation support is available by means of foundations penetrating the highly weathered rock and compact older alluvium underlying the site. Shallow foundations, including spread footings, are considered unsuitable for the pier foundations and are likely unsuitable for the abutment locations due to the thicknesses of soft and loose soil. These soft and loose soils are possibly liquefiable and subject to settlement. These materials are also not considered scour resistant.

- Driven steel piles are an optional foundation type; however, the presence of cobbles would likely require the use of driving shoes and/or cleanout drilling during driving. CIDH piling would be the preferred type; however, drilling would be difficult due to likely caving conditions and may require extensive casing. At a minimum, Caltrans standard 24-inch or larger CIDH piles with wet specifications would be needed. Abutment 1 (north bridge abutment) would consist of a foundation of thirteen 10-inch steel H-piles impact driven about 45 feet deep or two 60-inch CIDH piles. Pier 2 (the central bridge pier) would be on a foundation consisting of two 84-inch-diameter CIDH piles. Abutment 3 (south bridge abutment) would be built on a foundation consisting of two 60-inch CIDH piles. Installation of temporary sheet piles may be required for shoring the construction areas surrounding the central pier and the Abutment 3 foundations.

- Driven concrete piles are considered unsuitable due to the presence of cobbles and possibly larger clasts. The length of required piles would also present considerable transportation issues.

- It is expected that seepage during dry season construction above the channel elevation would be minor and controllable by pumping. This area receives considerable rainfall during the rainy season and construction during wetter periods of the year would likely encounter significant seepage issues.

AMM HYDRO-1 described in Section 2.2.1, Hydrology and Floodplain, will be incorporated into the project to reduce the potential for soil erosion during construction.

Operational Impacts

The project area is susceptible to strong ground shaking, liquefaction, and soil expansion. Because the project would be operating in an area where the effects of ground shaking generated by nearby earthquake faults could affect the bridge and area roads, there would be some risk to public safety. However, use of current seismic standards required of the project design would minimize this risk. Other operating risks associated with geologic hazards in the Honeydew area include some elevated risk of liquefaction, which could make roads unsafe, and the potential for erosion, particularly on the south side of the river. As vegetation re-establishes in areas disturbed during project construction, the potential for project operation to be affected by erosion would decrease.

Alternative 3 - Concrete Girder Bridge

Construction and operation of the project proposed under Alternative 3 would require geologic, soils, seismic, and topographic considerations similar to those described for Alternative 2 (Preferred Alternative).

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

The project will be conducted in accordance with all federal, state, and local regulatory requirements previously described. In addition, AMM HYDRO-1 described in Section 2.2.1, Hydrology and Floodplain, will be incorporated into the project to reduce the potential for soil erosion during construction.

2.2.4. PALEONTOLOGY

REGULATORY SETTING

Paleontology is a natural science focused on the study of ancient animal and plant life as it is preserved in the geologic record as fossils. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized projects. Because this project would receive federal funding the following laws, ordinance, and regulations apply:

- 23 USC 1.9(a) requires that the use of Federal-aid funds must be in conformity with all federal and state laws.

- 23 USC 305 authorizes the appropriation and use of federal highway funds for paleontological salvage as necessary by the highway department of any state, in compliance with 16 USC 431–433 above and state law.

Under California law, paleontological resources are protected by CEQA including the following:

- PRC, Section 5097.5 prohibits excavation, disturbance, or removal of any archaeological or vertebrate paleontological site, or historical feature situated on public lands, except with the express permission of the public agency having jurisdiction over such lands.

- CCR (Title 14, Division 3, Chapter 1), Section 4307, states that no person shall destroy or disturb paleontological features by removing earth, sand, gravel, or rocks.

- CCR (Title 14, Division 3, Chapter 1), Section 4309, provides for a State Department of Parks and Recreation-granted permit authorizing the removal, destruction, or disturbance of paleontological resources.

AFFECTED ENVIRONMENT

The project area lies within the Mattole Valley within the California Coast Ranges. The California Coast Ranges includes the Franciscan complex formation that contains fossils and deposits

from the Cretaceous and Jurassic periods (Roscoe and Associates 2013). The project area is consistent with geologic descriptions for a river system with surrounding river terraces. The immediate project area contains Quaternary age (2 million years ago to present) nonmarine terrace deposits consisting of gravel, sand, and clay. On either side of the Mattole River are Quaternary-age alluvial terrace deposits (Taber Consultants 2012).

Paleontological Sensitivity

Caltrans uses a tripartite scale to characterize paleontological sensitivity consisting of no, low, and high. Geologic units are classified based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts. This ranking applies to an entire geological unit and not to specific paleontological localities or small areas within the unit.

The coastal terrane associated with the Cape Mendocino and Eureka areas is characterized as mélange (i.e., mixture) (McLaughlin et al. 2000). The shallow portions of the project area (20 feet bgs) comprise more recent Quaternary-age alluvial deposits that contain low potential for fossils due to their young age. The older Cretaceous-age marine deposits associated with the Franciscan complex formation are known to contain fossils such as invertebrates (University of California Museum of Paleontology at Berkeley 2017). These deposits are, however, deep beneath the project area as well as outside of the immediately surrounding river terraces. Bridge foundations would be embedded into sedimentary rock (claystone/mudstone). The shallow portions of the project area and immediate surroundings are therefore considered to have low sensitivity potential for paleontological resources. As defined by Caltrans (2017a), a low sensitivity potential occurs in sedimentary rock units that 1) potentially contain fossils but have not yielded significant fossils in the past; 2) have not yet yielded fossils but possess a potential for containing fossil remains; or 3) contain common or widespread invertebrate fossils if the taxonomy, phylogeny, and ecology of the fossil species are well documented and understood.

ENVIRONMENTAL CONSEQUENCES

No-Build Alternative

Under the No-Build Alternative, the existing bridge would not be modified, and no construction or ground-disturbing activities would occur. There would be no impacts on paleontological resources.

Alternative 1 - Camelback Truss Bridge

Construction and operational impacts on paleontological resources for Alternative 1 would be similar to those described for Alternative 2 (Preferred Alternative).

Alternative 2 - Steel Girder Bridge (Preferred Alternative)

Construction Impacts

Although paleontological sensitivity potential is low in the project area, and there are no known, recorded paleontological resources in the project area (Paleobiology Database 2018), ground-disturbing construction activities might result in the disturbance or loss of paleontological resources. Project-related excavations would be between 4 and 12 feet deep for abutments and center pier and approximately 30 feet deep for driven H-piles. These relatively shallow excavations for the abutments and center pier would be within the more recent Quaternary age alluvial deposits, which have low sensitivity for paleontological resources. Deeper excavations (i.e., drilling) needed to install H-piles could reach the Cretaceous-age marine deposits below the more recent Quaternary age deposits, but the absence of known, recorded paleontological resources and the limited area that would be affected make potential construction impacts reduces the potential for construction-related impacts on paleontological resources. Pre-drilling would be used, if necessary, for driven piles, and drilling would be used for CIDH piles. The bridge foundations would be embedded into sedimentary rock (claystone/mudstone). It is anticipated that the project would have no construction-related impacts on paleontological resources.

AMM PALEO-1 described below will be incorporated into the project to reduce the potential impacts on paleontological resources in the event of the inadvertent discovery of such resources.

Operational Impacts

The Preferred Alternative would replace the existing bridge with a new bridge on the same alignment. Operation of the new bridge would not involve excavation, grading, or other earthmoving activities. Therefore, no operational impacts on paleontological resources would occur.

Alternative 3 - Concrete Girder Bridge

Construction and operational impacts on paleontological resources for Alternative 3 would be similar to those described for Alternative 2 (the Preferred Alternative).

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

The project will be conducted in accordance with all federal, state, and local regulatory requirements previously described. In addition, the following AMM will be incorporated into the project to minimize potential effects on paleontological resources:

- **AMM PALEO-1:** Caltrans Standard Specification 14-7.03 requires that if unanticipated paleontological resources are discovered, work shall halt within 60 feet of the discovery and the engineer shall be notified. Compliance with this measure shall ensure that potential unknown paleontological resources are properly handled and secured if discovered.

2.2.5. HAZARDS AND HAZARDOUS WASTE/MATERIALS

REGULATORY SETTING

Hazardous materials, including hazardous substances and wastes, are regulated by many state and federal laws. Statutes govern the generation, treatment, storage, and disposal of hazardous materials, substances, and waste, and also the investigation and mitigation of waste releases, air and water quality, human health, and land use.

The primary federal laws regulating hazardous wastes/materials are the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, and the Resource Conservation and Recovery Act (RCRA) of 1976 (RCRA). The purpose of CERCLA, often referred to as "Superfund," is to identify and cleanup abandoned contaminated sites so that public health and welfare are not compromised. The RCRA provides for "cradle to grave" regulation of hazardous waste generated by operating entities. Other federal laws include the following:

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

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

California regulates hazardous materials, waste, and substances under the authority of the California Health and Safety Code and is also authorized by the federal government to implement RCRA in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and cleanup of contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Worker and public health and safety are key issues when addressing hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is found, disturbed, or generated during project construction.

Senate Bill 1241 required the Office of Planning and Research, the Natural Resources Agency, and the California Department of Forestry and Fire Protection (CAL FIRE) to develop

amendments to the "CEQA Checklist" for the inclusion of questions related to fire hazard impacts for projects occurring on lands classified as very high fire hazard severity zones.

AFFECTED ENVIRONMENT

The information presented in this section is based on the *Hazardous Waste Initial Site Assessment* (ISA)*/Preliminary Site Investigation* (PSI) prepared for the Honeydew Bridge Replacement Project (WRECO 2017, 2021). The ISA/PSI investigated the existing bridge site and nearby private parcels along Mattole Road, Wilder Ridge Road, and Burrel Road. The ISA included regulatory records searches, file reviews, and a visual site survey. The PSI included a limited subsurface soil investigation, aerially deposited lead (ADL) survey, pre-demolition asbestos containing material survey, and lead-based paint (LBP) survey. The purpose of the ISA/PSI was to identify potential recognized environmental concerns and/or activity and use limitations. A recognized environmental concern is defined as the likely presence that a hazardous substance or petroleum hydrocarbon was or may be released into the ground or water in an area. Activity and use limitations identify when residual levels of a hazardous substance or petroleum hydrocarbon may be present on a property and recommends that unrestricted use of the property may not be acceptable.

A review of the USEPA Superfund Enterprise Management System database did not find any federally listed National Priorities List or Superfund Alternative Approach sites near the project vicinity (WRECO 2017).

Limitations

The ISA does not include testing of any kind and was limited by anecdotal and visual evidence of potential recognized environmental concerns. The PSI did not include a full-scale environmental site investigation to prove that the project area is environmentally devoid of hazardous or toxic materials. There are no implied or expressed guarantees regarding environmental conditions; conclusions are based on gathered observations of conditions during the site visit.

Aboveground Storage Tanks

The project area was found to contain one aboveground, 1,000-gallon fuel storage tank set on a concrete pad near the Honeydew Country Store. This aboveground storage tank is used to store retail gasoline and diesel. There is no concrete apron surrounding the adjacent gas and diesel pumps, only exposed soil (WRECO 2017). There are also two propane tanks, east and south of the store's parking lot, respectively. Two portable toilets were observed on the east side of the store during field studies and may still be present at the time of construction.

Underground Storage Tanks

A regulatory database review (California Department of Water Resources 2021) and reconnaissance survey conducted during the ISA found one report of a Leaking Underground Storage Tank (LUST) site within 1 mile of the project area. The LUST site is at the Honeydew Country Store at 44670 Mattole Road. The Honeydew Country Store formerly contained three

gasoline underground storage tanks (UST) that were removed in 1999. After removal, the soil tested positive for maximum concentrations of total petroleum hydrocarbons as gasoline (TPH-g). Former buried pipelines associated with the USTs were removed. It was determined that contaminated groundwater did not harm neighboring locations due to the upslope nature and distance of surrounding properties. *Soil Management Contingency Plan for Future Subsurface Work in Areas of Possible Petroleum Impacted Soil* (Blue Rock Environmental, Inc. 2015) was accepted by the SWRCB in 2015. Concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tertbutyl ether (MTBE) were each less than 2 milligrams per kilogram (mg/kg). The amount of TPH-g in the soil was originally found in maximum concentrations as high as 39,000 mg/kg. During the PSI, shallow soil samples around the site were found to contain concentrations of TPH-g at only 81 mg/kg; the samples were reported as non-detect (WRECO 2017). A remedial action completion certificate was issued on February 9, 2015.

Although the LUST site is adjacent to the active construction area, project activities would not encroach into the site. The project design does not include any disturbance on the store's property at the request of the property's owner.

Groundwater

There are no recorded observation wells near the project location (WRECO 2017). A review of local cleanup site records on the SWRCB GeoTracker database (2021) indicated that the minimum depth to groundwater ranged from approximately 9 feet to approximately 16 feet bgs near the Honeydew Country Store. As previously described in the UST discussion, groundwater did not incur contamination as a result of past UST leaks known to have occurred in the project area. A remedial action completion certificate was issued by the County of Humboldt Department of Health and Human Services, Division of Environmental Health, on February 9, 2015.

A limited subsurface investigation used to determine whether hazardous materials occurred in groundwater was conducted during preparation of the PSI (WRECO 2017). The boring locations were selected to represent areas of proposed excavation for the project, including Mattole Road within the area planned for the southern bridge approach roadway reconstruction, and potential areas of contamination associated with the site's past UST leakage (Figure 2-7). Due to the encounter of a gravel and clay layer near 6 feet bgs in both borings, only three total soil samples were collected, and no groundwater was encountered. However, because groundwater has been historically recorded in the vicinity of the project to be as shallow as 9 feet bgs, it is highly likely that the project would encounter groundwater during construction. Temporary dewatering for construction of the instream pier would be achieved by means of diking/diversion of surface water and sump pumping. Water would be pumped to a gravel bar upstream of the pier site and approximately 100 feet from the wetted channel, where it would be allowed to percolate through the gravel bar strata. A technical work plan will be prepared by the Contractor and submitted to Caltrans and NMFS for approval before any dewatering or diversion activities.

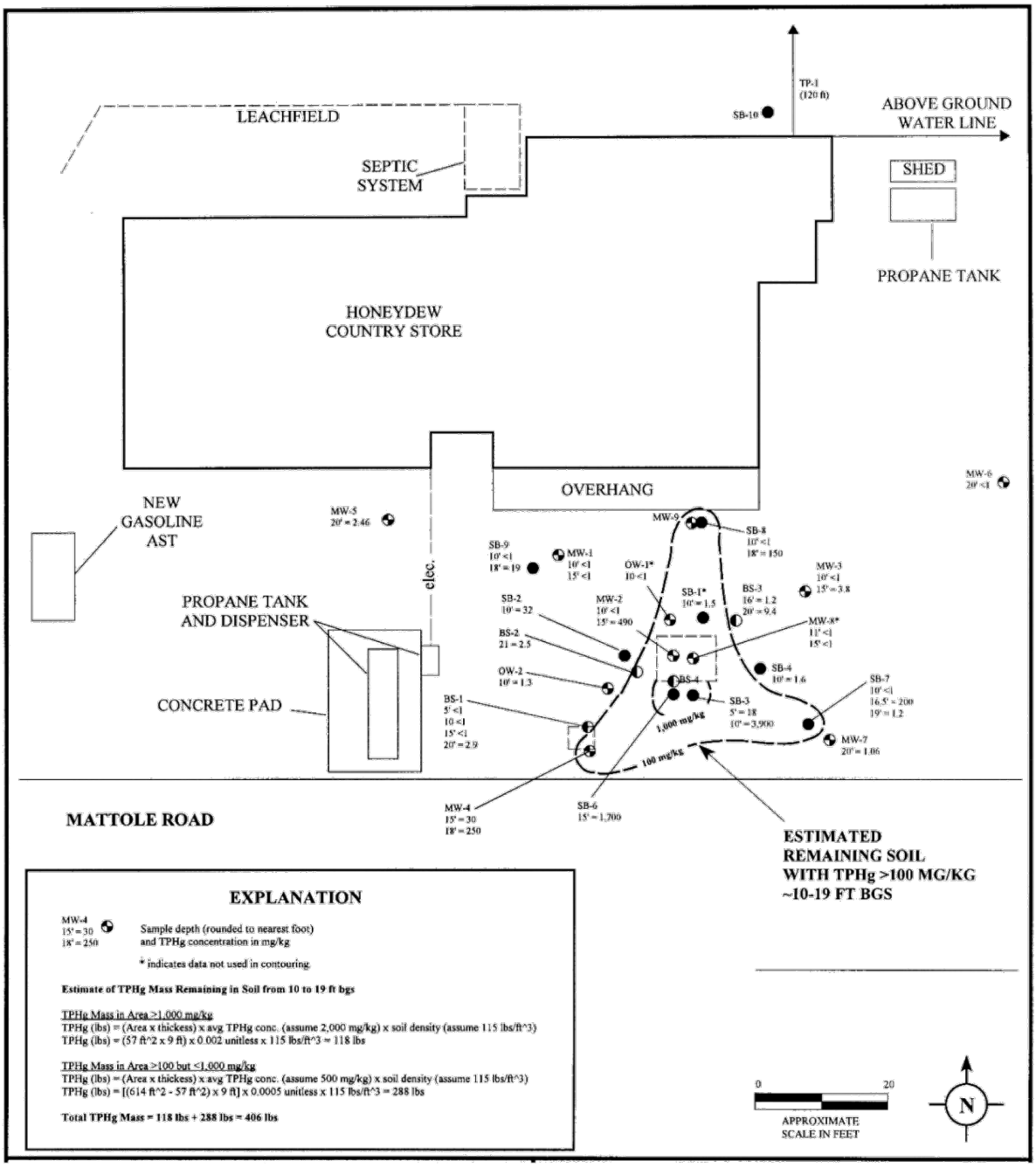


Figure 2-7. Underground Storage Tank - Remaining Petroleum in Soil

Source: WRECO 2017

Soil samples taken during the limited subsurface investigation were found to contain lead, asbestos, and petroleum hydrocarbons (diesel) (WRECO 2017). Contaminants of concern in groundwater in the vicinity of the project include, but are not limited to lead, TPH-g, benzene, MTBE/tertiary butyl alcohol/other fuel oxygenates, toluene, and xylene. Although the LUSTs once associated with the store's retail fuel facility was remediated in 2015, presence of the approximately 1,000-gallon, aboveground storage tank and dispenser with no secondary containment could be a continued source of fuel pollutants in groundwater at the site (WRECO 2017).

Asbestos

Naturally occurring asbestos (NOA) is found in certain rocks, including serpentine. The most common forms of NOA minerals are chrysotile, actinolite, and tremolite. A review of the *General Location Guide for Ultramafic Rocks in California - Areas Likely to Contain Naturally Occurring Asbestos* (CGS Open-file Report 2000-19, 2000) indicated that NOA was not mapped on, or in the near vicinity, of the project site (WRECO 2017). Laboratory testing found no evidence of NOA in the project area.

The bridge's age makes it susceptible to having asbestos in its construction materials. In accordance with the USEPA's National Emission Standard for Hazardous Air Pollutants (NESHAP) regulation, facilities planned for renovation or demolition must be inspected for ACM before the planned renovation or demolition. In March 2021, three bulk samples were collected under the purview of a California Certified Asbestos Consultant (CAC #05-3872) (WRECO 2021). All sample results were below detection limits for asbestos. Therefore, the bridge material sampled for this survey is not subject to regulation by the USEPA as ACM or regulated ACM, or California's hazardous waste law (Title 22 CCR Chapter 11). The sampled materials are not characterized by Cal/OSHA as ACM or asbestos-containing construction material and are not assigned a Cal/OSHA asbestos work class designation.

Lead-Based Paint

The existing bridge truss reinforced concrete pier, two bridge traffic signs, and an abandoned boat in the Mattole River floodplain underneath the bridge were found to contain varying concentrations of LBP. The existing roadway striping was assumed to contain lead at hazardous levels due to its color, age, and industry practice, and will be treated as such for management purposes. The PSI tested samples from paint chips from these areas for concentrations of lead above regulatory thresholds for worker safety or in levels necessary to be specially handled and to require hazard materials disposal protocols.

The green and yellow paint applied to the bridge have been determined to contain LBP at levels far above the regulatory threshold of 0.1 percent concentration. The yellow paint on one of the bridge signs was also found to contain levels of LBP over the regulatory threshold. The white paint on the boat and the other bridge sign was found to contain concentrations of lead below the regulatory thresholds and is not considered to be hazardous.

Total Lead and Aerially Deposited Lead

As previously described, lead is known to occur in soils in the project area. Most soil samples taken as part of the ISA (WRECO 2021) did not contain detectable lead concentrations in excess of San Francisco Bay Regional Board environmental screening levels (ESLs) for lead. These screening criteria consider direct exposure to human health and shallow soil exposure to residential, commercial/industrial, and construction workers regardless of land use and soil excavation depth. Of the multiple soil samples collected, two samples—one on each side of the river—were found to contain detectable lead concentrations. A sample from the southern side of the river exceeded residential ESL, while a sample taken from the northern side exceeded all ESLs. Although total lead concentrations detected in the southern and northern sides of the river (120 mg/kg and 490 mg/kg, respectively) were below the Total Threshold Limit Concentration level of 1,000 mg/kg for hazardous waste, they were above the soluble threshold limit concentration "rule of thumb" threshold for waste extraction testing of 50 mg/kg (WRECO 2017, 2021). Some of the elevated lead concentrations in soils may be the result of ADL from the historical use of leaded gasoline in vehicles operating on local roads. Human exposure levels and worker safety requirements during project construction are determined by ESLs.

Soil determined to contain lead concentrations exceeding stipulated thresholds must be managed during construction for worker safety. A lead compliance plan will be required for soil disturbance when lead concentrations are non-hazardous (Caltrans Standard Special Provision 7-1.02K(6)(j)(iii)). Aerially deposited lead in soils will also be managed in accordance with Caltrans Standard Special Provision 14-11.08 Regulated Material Containing Aerially Deposited Lead (2018) and Caltrans Standard Special Provision 14-11.09 Minimal Disturbance of Regulated Material Containing Aerially Deposited Lead (2018) (WRECO 2021).

Treated Wood Waste

Treated wood waste comes from old wood that has been treated with chemical preservatives for purposes of protecting the wood against attacks from insects, microorganisms, fungi, and other environmental conditions that can lead to decay of the wood, and the chemical preservative is registered pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. Sec. 136 et seq.). These chemicals help protect wood from insect attack and fungal decay. Arsenic, chromium, copper, creosote, and pentachlorophenol are among the chemicals used to preserve wood and are known to be toxic or carcinogenic. The Honeydew Bridge deck and guard rail were constructed using treated wood (WRECO 2017). Harmful exposure to these chemicals may result from touching, inhaling, or ingesting treated wood waste particulate (e.g., sawdust and smoke). On August 31, 2021, Governor Newsom signed Assembly Bill 332. AB 332 adopts new Alternative Management Standards (AMS) for treated wood waste that are codified in Health and Safety Code section 25230. The AMS are statutes (HSC 25230 – 25230.18) established by AB 332, that allows handling non-RCRA hazardous treated wood waste in accordance with a set of alternative management standards in lieu of the requirements for hazardous waste pursuant to Health and Safety Code, division 20, chapter 6.5, articles 6, 6.5, and 9 and California Code of Regulations, title 22, division 4.5, chapters 12, 13, 14, 15, 16, 18, and 20. In summary, the AMS lessen storage requirements, extend accumulation periods, allow shipments without a hazardous waste manifest and a hazardous waste hauler, and allow

disposal at specific non-hazardous waste landfills. The AMS simplify and facilitate the safe and economical disposal of treated wood waste. Although hazardous waste generators are required to properly classify their waste through knowledge or laboratory analysis, generators of treated wood waste can presume their treated wood waste is hazardous waste and avoid expensive laboratory testing. Generators can then manage their waste in accordance with the AMS, including disposal at certain non-hazardous waste landfills. Upon acceptance at these certain landfills, the treated wood waste, at that point, becomes non-hazardous waste pursuant to Health and Safety Code section 25230.16.

Wildland Fire

The project area is in a rural area along a river corridor and adjacent to forested hillsides. According to the CAL FIRE map of Humboldt County Fire Hazard Severity Zones in State Responsibility Area (CAL FIRE 2021), the immediate project area in along the Mattole River channel is identified as a moderate severity zone surrounded by a high severity zone outside the main river channel.

ENVIRONMENTAL CONSEQUENCES

No-Build Alternative

Under the No-Build Alternative the project would not be constructed and no modifications to the existing bridge would occur. Potentially hazardous materials found in the project area would not be affected by any activities related to this project. Bridge and road maintenance and other activities that may result in disturbance of soils and infrastructure could, however, expose workers and the public through inhalation or direct contact. Left undisturbed, the potential for hazard would be low.

Alternative 1 - Camelback Truss Bridge

Construction and operational impacts related to hazardous waste and hazardous materials for Alternative 1 would be similar to those described for Alternative 2 (Preferred Alternative).

Alternative 2 - Steel Girder Bridge (Preferred Alternative)

Construction of Alternative 2 (Preferred Alternative) would require demolition of the existing Honeydew Bridge, improvements to Mattole Road, and various levels of temporary and permanent soil disturbance and excavation. The ISA/PSI studies (WRECO 2017, 2021) served as a preliminary assessment of hazardous materials that may be encountered and the potential for hazardous waste to be generated as a result of project construction and operation. The following discussion of anticipated impacts is based on these findings; however, the ISA/PSI specifies limitations in its scope and indicates that the potential exists for previously unknown hazardous waste or materials to be encountered during project construction. Mitigation Measure (MM) HAZ-1, Inadvertent Discovery of Hazardous Materials or Waste, described in the avoidance, minimization and mitigation measures section below will be used during construction in addition to contract specifications and applicable federal and state laws.

Construction/Demolition Impacts

Construction activities would involve ground disturbance, grading, and subsurface excavation. The deepest excavation activities would occur at the abutments and center pier and range from 4 to 12 feet in depth. Soil testing did not discover concentrations of hazardous compounds (WRECO 2017). According to the WRECO study, soil excavated from the project area within the depth ranges 0 to 6 feet bgs could be reused as inert soil. Depths beyond that range were not assessed. These soils would be stockpiled for waste screening and disposal unit classification during construction and would be subject to CCR Title 23 stockpile screening requirements. MM HAZ-1, Inadvertent Discovery of Hazardous Materials or Waste, described in the avoidance, minimization and mitigation measures discussion will be used to ensure that workers and the public would not be exposed to inadvertently discovered hazards that could be encountered during project construction.

Under Alternative 2, the existing bridge and approach roadways would be dismantled. None of the suspect materials (i.e., existing bridge materials) in the project area were found to contain asbestos at levels above the laboratory detection limit. Despite the negative finding, however, federal NESHAP regulations still require that notification of the proposed demolition be submitted to the North Coast Unified Air Quality Management District (Air District) and the USEPA (NESHAP Section 61.145(b)). MM HAZ-2, Asbestos, described in the avoidance, minimization and mitigation measures section below will be used the ensure compliance with these regulations and reduce any potential impacts related to asbestos removal to a less-than-significant level.

Construction demolition could result in worker exposure to LBP, which is known to occur in levels that exceed the regulatory threshold for LBP on the existing bridge trusses, signage, and on an abandoned boat beneath the south end of the bridge (WRECO 2017). The area where the truss would be dismantled would be protected with tarps and other precautionary measures to assure the soil would not be contaminated. This will be a requirement of the bridge demolition plan to be developed by the contractor and approved by the engineer. The effects of lead exposure in humans may include damage to circulatory, nervous, and reproductive systems. Handling and disposal of the existing bridge structure will require adherence to hazardous waste regulations and abatement before construction. MM HAZ-3, Lead-based Paint, described in the avoidance, minimization and mitigation measures section below will be used to reduce the potential for human exposure to LBP during project construction to a less-than-significant level.

The Honeydew Country Store contained one LUST site that had reported soil contamination (WRECO 2017). Concentrations of BTEX, MTBE, and TPH-g were originally found in the vicinity of the LUST site. Project activities would not disturb the affected area; therefore, the project would not expose the public or workers to potentially toxic soils associated with this known LUST site.

Treated wood waste resulting from demolition of the existing bridge will be handled according to the measures described below under MM HAZ-4, Treated Wood Waste.

Project construction would require use of equipment that use fuels, oils, and other potentially hazardous materials. Accidental leaks and spills could expose workers and the environment to

these compounds. AMM HYDRO-2 - Prevention of Accidental Spills of Pollutants, described in Section 2.2.1 will be used to prevent and contain accidental spills and leaks that could result from project construction.

Honeydew Elementary School is approximately 400 feet south of the project area, making it a sensitive receptor. Bridge demolition and other potential sources of hazardous materials associated with the project, such as the accidental spill of pollutants, will be handled in accordance with the mitigation measures (MM HAZ-1 through -3) described below and are not expected to affect the Honeydew Elementary School. Therefore, no hazardous waste impacts on the Honeydew Elementary School are anticipated under Alternative 2 (Preferred Alternative).

Construction Criteria

Construction activities will be conducted in accordance with all applicable federal, state, and local regulatory requirements included in, but not limited to this EIR/EA.

The use of construction equipment in and around vegetated areas increases the potential for wildfires to be ignited. MM HAZ-5 Wildfire Potential described below will be used to reduce the risk of wildfire associated with project construction to a less-than-significant level. Operation of the project would have no effect on wildfire potential.

Operational Impacts

Under Alternative 2 (Preferred Alternative), the existing bridge would be replaced by a composite welded steel girder bridge. The new bridge would not contain any hazardous construction materials such as LBP, asbestos, or treated wood waste. Small amounts of hazardous materials such as vehicle fuel and oil would be generated from vehicles crossing the bridge. These amounts are considered minimal amounts of non-point source releases and would not increase compared to existing levels.

Alternative 3 - Concrete Girder Bridge

Construction and operational impacts related to hazardous waste and hazardous materials for Alternative 3 would be similar to those described for Alternative 2 (Preferred Alternative).

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

In addition to use of AMM HYDRO-2 described in Section 2.2.1, Hydrology and Floodplain, the following mitigation measures will be used to reduce potential project-related impacts related to hazardous materials and waste to no impact or less-than-significant impact levels:

- **MM HAZ-1 - Inadvertent Discovery of Hazardous Materials or Waste:** Even when all appropriate procedures to identify and characterize contamination have been followed, it is still possible to discover previously unknown contamination and hazards during construction activities. Contamination that is unknown until exposure and discovery during construction will require sampling and testing before removal from the site and subsequent disposal. Health and Safety Code 25914.2 specifies that unanticipated

hazardous substances (including hazardous waste) and/or asbestos encountered during construction cannot legally be tested or managed and removed by the prime contractor who discovered it. Hazardous substances and asbestos can only be managed by the prime contractor if this work was specifically included in the original contract documents. Therefore, a contract change order cannot be used in these situations. In the event that unknown hazardous materials are discovered during construction, the engineer will stop work in the area of concern and engage the appropriately licensed professional(s) to assess the material and determine the appropriate removal, disposal and/or avoidance measures. Consult the current *Unanticipated Hazardous Waste Decision Tree* (Caltrans 2014) (Figure 2-8).

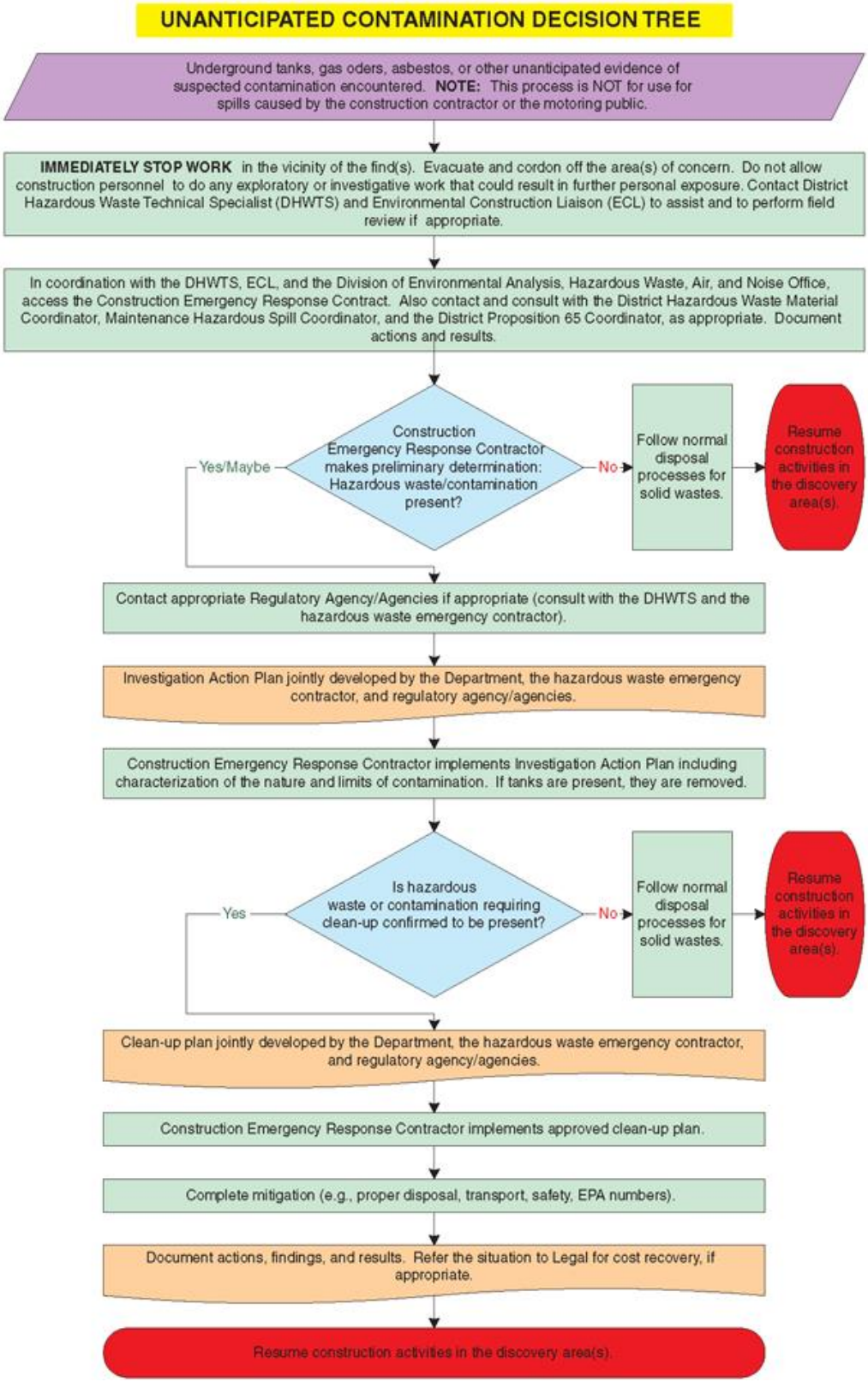


Figure 2-8. Unanticipated Hazardous Waste Decision Tree

- Source: Caltrans 2014

MM HAZ-2 - Asbestos: The PSI determined that all suspected ACM did not contain asbestos above the laboratory detection limit. Despite the low levels of asbestos detected in the project area, NESHAP regulations require notification of the demolition to be submitted to the Air District and the USEPA (NESHAP Section 61.145(b)). Notifications must contain certain specified information including but not limited to the scheduled start and completion date of the work, the location of the site, the names of operators or asbestos removal contractors, methods of removal and the amount of asbestos, and whether the operation is a demolition or renovation.

- **MM HAZ-3 - Lead-based Paint (LBP):** The following BMPs will be used when project activities involve the handling of LBP:

  - LBP shall be abated before planned construction/demolition by a licensed contractor in accordance with 17 CCR 3500.

  - LBP must be transported under a Uniform Hazardous Waste Manifest (Title 22 CCR, Section 6626.23). LBP must be disposed of either at a Class I landfill or at other landfills that have specific permits to accept these wastes.

  - Demolition and construction work shall be subject to the applicable work practices for LBP and lead hazards including the following:
    - California Construction Order 1532.1(a)
    - Lead-in-Construction Standard
    - Title 17, CCR (CCR), Division 1, Chapter 8
    - Work Practices for LBP and Lead Hazards

  - If more than 100 square or linear feet of lead-containing materials are disturbed, steps must be taken to prevent worker exposure to lead. The Department of Industrial Relations shall be notified at least 24 hours before beginning work.

- **MM HAZ 4 - Treated Wood Waste:** The County shall include provisions in the construction bid documents to ensure the proper removal and disposal of treated wood waste material found on the existing bridge. The following measure shall be implemented to reduce construction-related environmental impacts that could result from treated wood waste removal:

  The contractor will remove treated wood waste following the alternative management standards specific under Caltrans Non-Special Stand Provision (NSSP) 14-11.14 for treated wood waste, as well as AB 332 AMS contained in statutes (Health and Safety Code section 25230 – 25230.18) and CCR Title 22, Chapter 34, Sections 67386.1 through 67386.12 (2020) for labeling, accumulation, off-site shipment tracking, notification, treatment, and disposal. All personnel that may come into contact with treated wood waste will receive, at a minimum, training on safe handling, sorting and segregating, storage, labeling (including date), and proper disposal methods.

- **MM HAZ 5 - Wildfire Potential:** The County shall include provisions in the construction bid documents to minimize the potential for ignition of wildfire as a result of project construction. The following measure shall be implemented to reduce construction-related wildfire ignition potential:

    - Per the requirements of PRC 4442, the County shall include a note on all construction plans that internal combustion engines shall be equipped with an operational spark arrester, or the engine must be equipped for the prevention of fire.

2.2.6. AIR QUALITY

This section describes the existing environmental setting and potential impacts relating to air quality. Impacts relating to greenhouse gases (GHG) and climate change are discussed in Chapter 3.

REGULATORY SETTING

The Federal Clean Air Act (FCAA), as amended, is the primary federal law that governs air quality while the California Clean Air Act is its companion state law. These laws, and related regulations by the USEPA and the California Air Resources Board, set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and state ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM)—which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM_{10}) and particles of 2.5 micrometers and smaller ($PM_{2.5}$)—and sulfur dioxide (SO_2). In addition, national and state standards exist for lead (Pb), and state standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H_2S), and vinyl chloride. The NAAQS and state standards are set at levels that protect public health with a margin of safety and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under the NEPA. In addition to this environmental analysis, a parallel "Conformity" requirement under the FCAA also applies.

Conformity

The conformity requirement is based on FCAA Section 176(c), which prohibits USDOT and other federal agencies from funding, authorizing, or approving plans, programs, or projects that do not conform to State Implementation Plan (SIP) for attaining the NAAQS. "Transportation Conformity" applies to highway and transit projects and takes place on two levels: the regional (or planning and programming) level and the project level. The proposed project must conform at both levels to be approved.

Conformity requirements apply only in nonattainment and "maintenance" (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. USEPA regulations at 40 Code of Federal Regulations (CFR) 93 govern the conformity process. Conformity requirements do not apply in unclassifiable/attainment areas for NAAQS and do not apply at all for state standards regardless of the status of the area.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the NAAQS for CO, NO_2, O_3, PM_{10} and $PM_{2.5}$, and in some areas (although not in California), SO_2. California has nonattainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO_2, and also has a nonattainment area for Pb; however, lead is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of RTPs and Federal Transportation Improvement Programs (FTIPs) that include all transportation projects planned for a region over a period of at least 20 years (for the RTP) and 4 years (for the FTIP). RTP and FTIP conformity uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the FCAA and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization, FHWA, and Federal Transit Administration make the determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the FCAA. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept and scope and the "open-to-traffic" schedule of a proposed transportation project are the same as described in the RTP and FTIP, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Project-level conformity is achieved by demonstrating that the project comes from a conforming RTP and TIP; the project has a design concept and scope[5] that has not changed significantly from those in the RTP and TIP; project analyses have used the latest planning assumptions and USEPA-approved emissions models; and in PM areas, the project complies with any control measures in the SIP. Furthermore, additional analyses (known as hot-spot analyses) may be required for projects occurring in CO and PM nonattainment or maintenance areas to examine localized air quality impacts.

Project Exemption from Conformity

Projects that are exempt from air quality conformance under the federally funded highway and transit transportation conformity (40 CFR 93.101) are generally air quality neutral. These projects are categorized as Safety, Mass Transit, Air Quality, and Other. The Honeydew Bridge replacement project is a highway project that would correct, improve, and eliminate a potentially hazardous feature (40 CFR 93.126). The project was determined to be a non-capacity increasing project (Peterson, pers. comm. 2021) and would not interfere with an approved SIP.

[5] "Design concept" means the type of facility that is proposed, such as a freeway or arterial highway. "Design scope" refers to those aspects of the project that would clearly affect capacity and thus any regional emissions analysis, such as the number of lanes and the length of the project.

Climate Change

Neither the USEPA nor FHWA has issued explicit guidance or methods to conduct project-level greenhouse gas analysis. FHWA emphasizes concepts of resilience and sustainability in highway planning, project development, design, operations, and maintenance. Because California legislation and executive orders on climate change have set forth requirements, the issue is addressed in the California CEQA chapter of this document (Chapter 3).

AFFECTED ENVIRONMENT

Climate and Topography

The project area is within the North Coast Air Basin (NCAB), which includes Humboldt, Del Norte, Trinity, and Mendocino Counties and a portion of Sonoma County. The climate in the NCAB is primarily influenced by the Pacific Ocean. During the summer, thick fog and northwesterly winds blow in from the ocean and cool down hot ground surfaces. In the winter, the area has high levels of precipitation that are largely driven by oceanic storms (Humboldt County 2017). Radiation or subsidence inversions are common in the NCAB and can be vertical or horizontal. Radiation inversions occur when the air layer near the ground cools and is trapped beneath the warm air layer. This occurs during the night and early mornings regularly and is most prominent during the cooler months. Subsidence inversions are caused by downward moving air aloft. This is common in high pressure areas and off the coast. During subsidence inversions, air travels downward and warms quickly, which limits the vertical mixing of air. This type of inversion covers a large area and is more common during warmer summer months.

Humboldt County generally has cool summers and mild winters. Precipitation and fog are both frequent during the winter. Average annual rainfall in Humboldt County ranges from 38 inches to 141 inches, and almost all of it falls between October and April. Temperatures in inland areas range from the 30s to 90s (degrees Fahrenheit).

The project area is within the Mattole Valley. In valleys, wind direction often assumes a daily pattern of strong airflows. In the morning, cool air from higher elevations flows down the valley. In the later part of the day, the air heats up and moves up the valleys (Humboldt County 2002).

In the rural portions of Humboldt County, air quality concerns are mostly related to industrial emission sources rather than from urbanization and mobile sources. Air quality is regulated through emissions limits for individual sources of pollution such as criteria air pollutants. Mobile sources of pollutants, such as toxic air contaminants, are regulated through emission standards for on-road motor vehicles. The Air District prepares a risk assessment for all major point sources of toxic air contaminants within the NCAB every 4 years (Humboldt County 2002).

Existing Air Quality

The existing air quality in Humboldt County can be measured by attainment of the standards established in the NAAQS and California ambient air quality standards (CAAQS**)**. The NAAQS and CAAQS are set for different pollutants and may vary in their concentrations and measurement periods. For example, some standards are set by parts per million (ppm) or

micrograms per cubic meter (µg/m^3) and some standards are set for a 24-hour average or an annual average. Table 2-11 shows the state and federal standards for criteria pollutants in Humboldt County.

Monitoring stations are used by the Air Resources Board (ARB) and USEPA to determine whether Humboldt County and the Air District meet the NAAQS and CAAQS. The monitoring station is also used to determine the region's attainment status relating to criteria air pollutants. Three stations monitor air quality in Humboldt County. Table 2-12 shows the air quality monitoring stations and the criteria pollutants they measure. Table 2-13 summarizes the air quality monitoring data from the Jacobs Station monitoring station for the last 3 years for which complete data are available (2014–2016). Table 2-13 indicates that there have been no exceedances of the state or federal standards during the 3-year monitoring period.

Table 2-11. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	State[a] Standard	Federal[b] Standard	Principal Health and Atmospheric Effects	Typical Sources
Ozone (O_3)	1 hour	0.09 ppm[c]	— [d]	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic volatile organic compounds (VOC) may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds (ROG or VOC) and nitrogen oxides (NOx) in the presence of sunlight and heat. Common precursor emitters include motor vehicles and other internal combustion engines, solvent evaporation, boilers, furnaces, and industrial processes.
	8 hours	0.070 ppm	0.070 ppm (4th highest in 3 years)		
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical ozone. Colorless, odorless.	Combustion sources, especially gasoline-powered engines, and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.
	8 hours	9.0 ppm	9 ppm		
Respirable Particulate Matter (PM_{10})[e]	24 hours	50 µg/m^3 [f]	150 µg/m^3 (expected number of days above standard < or equal to 1)	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many toxic and other aerosol and solid compounds are part of PM_{10}.	Dust- and fume-producing industrial and agricultural operations; combustion smoke and vehicle exhaust; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources.
	Annual	20 µg/m^3	— [e]		

Pollutant	Averaging Time	State[a] Standard	Federal[b] Standard	Principal Health and Atmospheric Effects	Typical Sources
Fine Particulate Matter ($PM_{2.5}$)[e]	24 hours	—	35 µg/m^3	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter—a toxic air contaminant—is in the $PM_{2.5}$ size range. Many toxic and other aerosol and solid compounds are part of $PM_{2.5}$.	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical and photochemical reactions involving other pollutants including NOx, sulfur oxides, ammonia, and ROG.
	Annual	12 µg/m^3	12.0 µg/m^3		
	24 hours (conformity process)[g]	—	65 µg/m^3		
	Secondary Standard (annual; also for conformity process)[g]	—	15 µg/m^3 (98th percentile over 3 years)		
Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm	0.100 ppm[h]	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain and nitrate contamination of storm water. Part of the "NOx" group of ozone precursors.	Motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations.
	Annual	0.030 ppm	0.053 ppm		
Sulfur Dioxide (SO_2)	1 hour	0.25 ppm	0.075 ppm[i] (99th percentile over 3 years)	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources such as active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.
	3 hours	—	0.5 ppm[j]		
	24 hours	0.04 ppm	0.14 ppm (for certain areas)		
	Annual	—	0.030 ppm (for certain areas)		
Lead (Pb)[k]	Monthly	1.5 µg/m^3	—	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also, a toxic air contaminant and water pollutant.	Lead-based industrial processes such as battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from older gasoline use may exist in soils along major roads.
	Calendar Quarter	—	1.5 µg/m^3 (for certain areas)		
	Rolling 3-month average	—	0.15 µg/m^3 [l]		
Sulfate	24 hours	25 µg/m^3	—	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources such as volcanic areas, salt-covered dry lakes, and large sulfide rock areas.

Pollutant	Averaging Time	State[a] Standard	Federal[b] Standard	Principal Health and Atmospheric Effects	Typical Sources
Hydrogen Sulfide (H_2S)	1 hour	0.03 ppm	—	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea. Strong odor.	Industrial processes such as refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources such as volcanic areas and hot springs.
Visibility Reducing Particles	8 hours	Visibility of 10 miles or more (Tahoe: 30 miles) at relative humidity less than 70%	—	Reduces visibility. Produces haze. NOTE: not directly related to the Regional Haze program under the Federal Clean Air Act, which is oriented primarily toward visibility issues in National Parks and other "Class I" areas. However, some issues and measurement methods are similar.	See particulate matter above. May be related more to aerosols than to solid particles.
Vinyl Chloride[xi]	24 hours	0.01 ppm	—	Neurological effects, liver damage, cancer. Also considered a toxic air contaminant.	Industrial processes

Adapted from Sonoma-Marin Narrows Draft EIR and California ARB Air Quality Standards chart (http://www.arb.ca.gov/research/aaqs/aaqs2.pdf).

[a] State standards are "not to exceed" or "not to be equaled or exceeded" unless stated otherwise.

[b] Federal standards are "not to exceed more than once a year" or as described above.

[c] ppm = parts per million

[d] Before 6/2005, the 1-hour ozone NAAQS was 0.12 ppm. Emission budgets for 1-hour ozone are still in use in some areas where 8-hour ozone emission budgets have not been developed, such as the San Francisco Bay Area.

[e] The annual PM10 NAAQS was revoked October 2006; it was 50 $\mu g/m^3$. The 24-hour PM2.5 NAAQS was tightened October 2006; it was 65 $\mu g/m^3$. The annual PM2.5 NAAQS was tightened from 15 $\mu g/m^3$ to 12 $\mu g/m^3$ in December 2012, and the secondary annual standard was set at 15 $\mu g/m3$.

[f] $\mu g/m^3$ = micrograms per cubic meter

[g] The 65 $\mu g/m^3$ PM2.5 (24-hr) NAAQS was not revoked when the 35 $\mu g/m^3$ NAAQS was promulgated in 2006. The 15 $\mu g/m^3$ annual PM2.5 standard was not revoked when the 12 $\mu g/m^3$ standard was promulgated in 2012. The 0.08 ppm 1997 ozone standard is revoked FOR CONFORMITY PURPOSES ONLY when area designations for the 2008 0.75 ppm standard become effective for conformity use (7/20/2013). Conformity requirements apply for all NAAQS, including revoked NAAQS, until emission budgets for newer NAAQS are found adequate, State Implementation Plan (SIP) amendments for the newer NAAQS are approved with an emission budget, the USEPA specifically revokes conformity requirements for an older standard, or the area becomes an attainment/unclassified area. SIP-approved emission budgets remain in force indefinitely unless explicitly replaced or eliminated by a subsequent approved SIP amendment. During the "Interim" period before availability of emission budgets, conformity tests may include some combination of build vs. No-Build, build vs. baseline, or compliance with prior emission budgets for the same pollutant.

[h] The final 1-hour NO_2 NAAQS was published in the Federal Register on 2/9/2010, effective 3/9/2010. The initial area designation for California (2012) was attainment/unclassifiable throughout. Project-level hot spot analysis requirements do not currently exist. Near-road monitoring starting in 2013 may cause redesignation to nonattainment in some areas after 2016.

[i] EPA finalized a 1-hour SO_2 standard of 75 ppb (parts per billion [thousand million]) in June 2010. Nonattainment areas have not yet been designated as of 9/2012.

Pollutant	Averaging Time	State[a] Standard	Federal[b] Standard	Principal Health and Atmospheric Effects	Typical Sources

j The secondary standard was set to protect public welfare rather than health. Conformity and environmental analysis address both primary and secondary NAAQS.
k The ARB has identified vinyl chloride and the particulate matter fraction of diesel exhaust as toxic air contaminants. Diesel exhaust particulate matter is part of PM_{10} and, in larger proportion, $PM_{2.5}$. Both the ARB and USEPA have identified lead and various organic compounds that are precursors to ozone and $PM_{2.5}$ as toxic air contaminants. There are no exposure criteria for adverse health effects due to toxic air contaminants, and control requirements may apply at ambient concentrations below any criteria levels specified above for these pollutants or the general categories of pollutants to which they belong.
l Lead NAAQS are not considered in Transportation Conformity analysis.

Table 2-12. Air Quality Monitoring Stations in Humboldt County

Station	Pollutants measured
Eureka Downtown Station	• 24-hour PM_{10} • Rolling annual arithmetic mean PM_{10} • 24-hour $PM_{2.5}$ • Rolling annual arithmetic mean $PM_{2.5}$
Jacobs Station 717 South Avenue Eureka, California Site ID: 060231004	• 24-hour PM_{10} • Rolling annual arithmetic mean PM_{10} • 24-hour $PM_{2.5}$ • Rolling annual arithmetic mean $PM_{2.5}$ • Maximum hourly ozone • Rolling 8-hour average ozone • Maximum hourly NO_2 • Rolling annual arithmetic mean NO_2 • Maximum hourly CO • Rolling 8-hour average maximum CO • Maximum hourly SO_2 • 24-hour average maximum SO_2 • 12-month moving average, annual arithmetic mean SO_2
Humboldt Hill 7333 Humboldt Hill Road Eureka, California Site ID: 060231005	• 24-hour PM_{10} • Rolling annual arithmetic mean PM_{10} • 24-hour $PM_{2.5}$ • Rolling annual arithmetic mean $PM_{2.5}$ • Maximum hourly ozone • Rolling 8-hour average ozone • Maximum hourly NO_2 • Rolling annual arithmetic mean NO_2 • Maximum hourly CO • Rolling 8-hour average maximum CO • Maximum hourly SO_2 • 24-hour average maximum SO_2 • 12-month moving average, annual arithmetic mean SO_2

Notes:
$PM_{2.5}$ = particulate matter 2.5 micrometers or smaller
PM_{10} = particulate matter 10 micrometers or smaller
Source: Air District

Table 2-13. Ambient Air Quality Monitoring Data Eureka, Arcata, and Fortuna Area in Humboldt County, CA

Pollutant Standards	Jacobs Station		
	2014	2015	2016
Particulate Matter (PM^{10})			
Number of days national 24-hour standard expected to be exceeded[a]	0	0	0
Number of days state standard expected to be exceeded[a]	—	—	—
National annual average	18.10 µg/m^3	18.00 µg/m^3	16.20 µg/m^3
State annual average	—	—	—
National maximum 24-hour average	104.70 µg/m^3	54.90 µg/m^3	53.60 µg/m^3
State maximum 24-hour average	—	—	—
Particulate Matter ($PM_{2.5}$)			
Number of days national 24-hour standard expected to be exceeded[a]	0	0	0
National annual average	5.30 µg/m^3	5.80 µg/m^3	6.00 µg/m^3
State annual average	-	5.80 µg/m^3	6.00 µg/m^3
National annual design value[b]	-	-	5.80 µg/m^3
State annual designation value[c]	6.00 µg/m^3	6.00 µg/m^3	6.00 µg/m^3
National maximum 24-hour average	21.20 µg/m^3	18.60 µg/m^3	20.00 µg/m^3
State maximum 24-hour average	21.20 µg/m^3	18.6 µg/m^3	20.00 µg/m^3
Carbon Monoxide (CO)[d]			
National maximum highest 8-hour concentration	0.9 ppm	0.90 ppm	1.00 ppm
National second-highest 8-hour concentration	0.90 ppm	0.90 ppm	0.90 ppm
Nitrogen Dioxide (NO_2)			
National maximum 1-hour concentration	35 ppb	26 ppb	48 ppb
National second-highest 1-hour concentration	30 ppb	25 ppb	26 ppb
Sulfur Dioxide (SO_2)			
National maximum 1-hour concentration	1.40 ppb	1.30 ppb	2.7 ppb
National second-highest 1-hour concentration	1.20 ppb	1.30 ppb	1.4 ppb

Pollutant Standards	Jacobs Station		
	2014	2015	2016
National maximum 24-hour concentration	1.20 ppm	1.20 ppm	1.30 ppm
National second-highest 24-hour concentration	1.10 ppm	1.10 ppm	1.20 ppm
1-Hour Ozone (O_3)			
Maximum 1-hour concentration	0.06 ppm	0.05 ppm	0.05 ppm
1-hour national design[b] value	0.05 ppm	0.05 ppm	0.05 ppm
1-hour state designation value[c]	0.05 ppm	0.05 ppm	0.05 ppm
1-hour peak day concentration	0.05 ppm	0.05 ppm	0.05 ppm
Number of days national standard expected to be exceeded[a, e]	0	0	0
8-Hour Ozone (O_3)			
National maximum 8-hour concentration	0.04 ppm	0.05 ppm	0.05 ppm
National second-highest 8-hour concentration	0.04 ppm	0.05 ppm	0.04 ppm
State maximum 8-hour concentration	0.05 ppm	0.05 ppm	0.05 ppm
8-hour state designation value[b]	0.05	0.05	0.05
8-hour expected peak day concentration	0.05	0.05	0.05

Sources: ARB 2017b, USEPA 2017. iADAM data from the ARB is from the Jacobs Station air quality monitoring station.

[a] An exceedance is not necessarily a violation.

[b] The $PM_{2.5}$ design value is the average of three consecutive national annual averages calculated according to the methods in Title 40 CFR part 50.

[c] The designation value is the highest average concentration during the last 3 years that is less than or equal to the related expected peak-day concentration if that data is available. If the data is not available, the designation value is based on the highest average concentration in the past 3 years.

[d] Highest and second-highest 8-hour values are computed by AQS software for each hour of the day as a moving average of eight 1-hour values and are non-overlapping. Non-overlapping means that the 8-hour averages do not include any of the same 1-hour values.

[e] Number of days exceeded is based on the national 1-hour standard, which was revoked in 2005.

Notes:

— insufficient data available to determine value.
µg/m^3 micrograms per cubic meter
ppb parts per billion
ppm parts per million

Attainment Status

The project site is in an attainment/unclassified area for all current NAAQS; therefore, federal conformity requirements do not apply. Because the project would be considered air quality

neutral as it would correct, improve, and eliminate a potentially hazardous feature (40 CFR 93.126) and was determined to be a non-capacity increasing project (Peterson, pers. comm. 2021), it would be exempt from air quality conformance. All state criteria area pollutants in Humboldt County are in attainment or unclassified, with the exception of PM_{10}. The State 24-hour PM_{10} classification is in nonattainment (ARB 2017a) for Humboldt County under the CAAQS. The PM_{10} in the county comes from several sources. A small amount is contributed by stationary sources such as power plants and manufacturing facilities. A larger portion is contributed by fireplaces, construction and demolition, road dust, and agricultural operations. The PM_{10} thresholds have historically been exceeded during the winter months due to the high number of wood stoves used in the county. Road dust is a substantial contributor to PM_{10} during the dry months. Automobiles are a local contributor to $PM_{10,}$ and sea salts are a substantial natural contributor to PM_{10} along the coast (Air District 1995; HCAOG 2014).

ENVIRONMENTAL CONSEQUENCES

No-Build Alternative

Under the No-Build Alternative the existing bridge would not be modified, and no construction activities would occur. There would be no operational- or construction-related air quality impacts because the existing bridge would remain unaltered.

Alternative 1 - Camelback Truss Bridge

Regional and project-level conformity under Alternative 1 would be the same as it would be for the Preferred Alternative—the project would conform on a regional and project level. Further, the potential for generation of mobile source air toxics (MSAT) emissions impacts would be the same as under the Preferred Alternative—the project would not produce meaningful MSAT levels. See additional detail below.

Alternative 2 - Steel Girder Bridge (Preferred Alternative)

Construction Impacts

The project would generate emissions from construction equipment exhaust, worker travel, materials and equipment deliveries, and fugitive dust from earthmoving activities. Construction would produce short-term increases in emissions of particulate matter ($PM_{2.5}$ and PM_{10}, ozone precursors, ROG, NO_X, and CO, and would generate diesel particulate matter (DPM).

The Preferred Alternative would take 154 days to complete and would involve a variety of worker cars, trucks, and equipment for up to 10 hours per day. Construction equipment and vehicles would be used intermittently, and the amount of use would vary day to day. Fugitive dust (PM_{10}) would be generated from earthmoving activities and hauling on dirt roads. Heavy-duty, off-road construction equipment and heavy trucks powered by gasoline and diesel engines would generate PM exhaust emissions, ROG, NO_X, CO, and DPM. These short-term increases in emissions would be temporary and localized but would not be expected to contribute substantially to regional air quality. Project emissions are not anticipated to conflict with the PM_{10} attainment plan or lead to an exceedance of regional air quality standards. In addition, the

project would implement Air District-recommended BMPs for fugitive dust control and construction vehicle emissions reductions.

Asbestos

NOA can occur in serpentine rocks and is found in minerals such as chrysotile, actinolite, and tremolite. The ISA/PSI (WRECO 2017) prepared for the project found that NOA was not mapped on or near the project area. The bridge and other structures in the project area were tested for ACM during the PSI. Although no asbestos materials were found, demolition activities would still be required to adhere to certain reporting requirements as described in Section 2.2.5, Hazardous Waste and Hazardous Materials.

Construction Requirements

The project area is in an attainment/unclassified area for all current NAAQS; therefore, conformity requirements do not apply.

In addition, construction activities will not last for more than 5 years at one general location, so construction-related emissions do not need to be included in regional and project-level conformity analysis (40 CFR 93.123(c)(5)).

As stated in 40 CFR 93.123 (c)(5), if a project's construction period lasts less than 5 years it is considered to cause only a temporary increase in emissions. Hot-spot analyses are not required to consider construction-related temporary increases in emissions.

AMM AIR-1 through AMM AIR-7 described below will be incorporated into the project to reduce the potential for project-related impacts on air quality.

Operational Impacts

The project area is in an attainment/unclassified area for all current NAAQS; therefore, conformity requirements do not apply. Unlike a Type I project that involves construction of a new highway on a new location or substantial horizontal or vertical alteration of an existing highway, or a Type II project that is specifically to address noise abatement due to expansion of an existing highway, a Type III project does not meet either of these classifications. A memorandum provided to the County by Caltrans (Peterson, pers. comm. 2021) acknowledged that replacement of the one-lane bridge with a two-lane structure would have no effect on traffic volumes, types, or speeds, thus neither increase nor decrease traffic volumes, traffic mix, or traffic speed. In addition, the project would not induce growth or cause an increase in vehicle miles traveled (VMT); therefore, it would not generate any operational-related emissions.

Mobile Source Air Toxics Emissions

Air toxics are a diverse group of air pollutants that are known to cause adverse health effects on humans. Mobile source air toxics (MSATs) are air toxics derived from mobile sources such as diesel trucks. The potential for MSAT emissions was evaluated using the *FHWA Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents* (Updated Interim

Guidance) (FHWA 2016). The project will not induce growth or cause an increase in VMT, and therefore has no potential for meaningful MSAT effects, and an analysis is not required.

Alternative 3 - Concrete Girder Bridge

Regional- and project-level conformity under Alternative 3 would be the same as it would be for the Preferred Alternative. Further, the potential for generation of MSAT emissions impacts would be the same as under the Preferred Alternative—the project would not produce meaningful MSAT levels. See additional detail above.

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

The project would include implementation of the following AMMs during construction as recommended by the Air District:

- **AMM AIR-1:** Cover open-bodied trucks when used for transporting materials likely to give rise to airborne dust.
- **AMM AIR-2:** Install and use hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Employ containment methods during sandblasting and other similar operations.
- **AMM AIR-3:** Use water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or clearing of land.
- **AMM AIR-4:** Apply asphalt, rock, or water on dirt roads, material stockpiles, and other surfaces that can give rise to airborne dusts.
- **AMM AIR-5:** Pave and maintain roadways in a clean condition.
- **AMM AIR-6:** Promptly remove earth or other track-out material from paved roads onto which earth or other material has been transported by trucking or earthmoving equipment, erosion by water, or other means.
- **AMM AIR-7:** Comply with Title 13 CCR 2485, which restricts idling of construction vehicles to no longer than 5 consecutive minutes.

2.2.7. NOISE

REGULATORY SETTING

The NEPA of 1969 and the CEQA provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

California Environmental Quality Act

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless those measures are not feasible. The rest of this section will focus on the NEPA/23 CFR 772 noise analysis; please see Chapter 3 of this document for further information on noise analysis under CEQA.

National Environmental Policy Act and 23 CFR 772

For highway transportation projects with FHWA involvement (and Caltrans, as assigned), the Federal-Aid Highway Act of 1970 and its implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. A noise analysis is required for all Type I projects. In general, a Type I project involves construction of a highway on a new location or the physical alteration of an existing highway where there is substantial horizontal or vertical alteration. A noise analysis is also required for Type II projects. A Type II project is a federal-aid highway project for noise abatement on an existing highway. A III project is a federal-aid highway project that does not meet the classifications of a Type I or Type II project. For a Type III project, a highway agency is not required to complete a noise analysis or consider abatement measures.

The Preferred Alternative and Alternatives 1 and 3 are all considered Type III projects. Unlike a Type I project that involves construction of a new highway on a new location or substantial horizontal or vertical alteration of an existing highway, or a Type II project that is specifically to address noise abatement due to expansion of an existing highway, a Type III project does not meet either of these classifications. A memorandum provided to the County by Caltrans (Peterson, pers. comm. 2021) acknowledged that replacement of the one-lane bridge with a two-lane structure would neither increase nor decrease traffic volumes, traffic mix, or traffic speed. Therefore, a noise analysis under 23 CFR 772 is not provided here.

AFFECTED ENVIRONMENT

The Honeydew community is rural. Ambient noise emanates from a combination of natural sources (e.g., the Mattole River and wind) and human causes such as motorized vehicle traffic, human voices, and daily residential and commercial operations. The project area itself includes Mattole Road, Wilder Ridge Road, and several lesser roads, but is otherwise undeveloped. Land uses immediately adjacent to the project area that may be sensitive to changes in existing noise levels (i.e., sensitive receptors) include residences, the Honeydew Country Store, the U.S. Post Office, and Honeydew Elementary School (Figure 2-2). The store and post office are roughly 100 feet from the existing bridge and the largest of the proposed staging areas, which would be in the Mattole River floodplain behind (north) of the buildings. The Honeydew Elementary School is roughly 450 feet from the existing bridge and 70 feet from a proposed staging area in an established pullout on the east side of Wilder Ridge Road. The closest residence is on the southeast corner of the Mattole Road/Wilder Ridge Road intersection, roughly 75 feet away from the southern bridge approach. Construction access to the Mattole River floodplain would use an existing, unimproved road that leaves Wilder Ridge Road on the

south side of this residence, bending east then north as it passes within about 15 feet of the house. The nearest proposed staging area to this residence would be approximately 200 feet north, in the Mattole River floodplain.

ENVIRONMENTAL CONSEQUENCES

No-Build Alternative

Under the No-Build Alternative there would be no modifications to the existing bridge. There would be no project-related changes to the existing ambient noise environment.

Alternative 1 - Camelback Truss Bridge

Construction Impacts

Construction impacts under Alternative 1 would, in general, be similar to those described under the Preferred Alternative, although Alternative 1 would require a slightly longer construction period (163 days versus 154 days for the Preferred Alternative). This would mean construction time and project-related construction noise, would last slightly longer than it would during the Preferred Alternative. Although the construction time varies between the alternatives, the type of equipment used, construction activities, and location of work to be performed would be the same under each alternative.

Operational Impacts

The new bridge configuration proposed under Alternative 1 would allow for the passage of larger vehicles over the Mattole River than under existing conditions, but overhead clearance would still present limitations to some vehicles. Larger vehicles such as trucks may choose to use Mattole Road as a through route, thus temporarily increasing localized noise levels; however, the bridge's height limitations would continue to restrict larger truck traffic passing through Honeydew. Otherwise, operational impacts under Alternative 1 would be the same as those for the Preferred Alternative. Because the project is a Type III as defined by the FHWA, 23 CFR 772—a project that does not require a noise study due to its purpose and need and design—operational-related changes in ambient noise levels in or near the project area would not be adverse.

Alternative 2 - Steel Girder Bridge (Preferred Alternative)

Construction Impacts

Noise produced during project construction would be temporary and would depend on the type, amount, and duration of equipment being used. Impacts on nearby sensitive receptors would depend on their distance away from the noise-generating sources and whether or not shielding or other noise-reducing materials exist. Construction noise levels would vary on a day-to-day basis and would depend on the type of construction being performed. Construction of Alternative 2 (Preferred Alternative) would take approximately 154 days and last two summer seasons.

Construction activities that would generate noise above existing ambient levels would include clearing, grubbing, demolition and dismantling for the existing bridge structure, excavation, earthwork, pile-driving, concrete work, and paving. The most noise would be generated by certain construction activities such as bridge demolition activities, and if used, pile-driving. The movement of heavy trucks in and out of the project area would also generate noise during construction. Sensitive receptors such as nearby residences, the store/post office, and school may experience periodic increases in ambient noise levels; however, such noises would be consistent with existing conditions such as daily truck traffic that passes through the Honeydew area. Although construction would temporarily increase ambient noise levels near active construction areas, limitations placed on intermittent and temporary construction activities, including restricting work to daylight hours will reduce potential adverse effects on nearby sensitive receptors. Temporary construction noise may affect, but would not adversely affect, the community of Honeydew, but would not be dissimilar to existing increases in ambient noise generated by existing truck traffic.

Construction Criteria

The project is a Type III project. Proposed noise level standards outlined in the Humboldt County Noise Ordinance Standards as contained in the current draft of the *Humboldt County General Plan Update* are shown in Table 2-14.

Table 2-14. Humboldt County Proposed Noise Ordinance Standard Policy: No Use Shall Create Ambient Noise Levels Exceeding Standards

Land Us Designation	Time Period	Noise Level (dB)	Noise Level (dB)
Residential	7 am–10 pm 10 pm–7 am	50 55	70 75
Commercial and Office	7 am–10 pm 10 pm–7 am	65 60	75 70
Industrial	7 am–10 pm 10 pm–7 am	70 65	80 75

Note
dB = decibels

MM NOI-1, Noise, described below, will be used to reduce potential project-related noise impacts on sensitive receptors.

Operational Impacts

The new bridge that would be constructed under the Preferred Alternative would open an alternative regional traffic route for all classes of through-truck traffic. Minor increases in episodic traffic noise could result from the anticipated slight increase in large truck and automobile traffic passing through Honeydew. However, other factors outside of the project area, such as road accessibility into and out of Honeydew and established regional traffic circulation patterns, would continue to moderate traffic-related noise in Honeydew. Post-project, operational ambient noise levels experienced by sensitive receptors in Honeydew are

anticipated to remain consistent with existing conditions. There would be no adverse effect on noise. In addition, the project is a Type III project as defined by FHWA; no noise analysis is required.

Alternative 3 - Concrete Girder Bridge

Construction Impacts

Construction impacts under Alternative 3 would, in general, be similar to those described under the Preferred Alternative, although Alternative 3 would require a slightly longer construction period (183 days versus 154 days for the Preferred Alternative). This would mean construction time and project-related construction noise would last slightly longer than the Preferred Alternative. Alternative 3 would require the use of a work trestle to shorten the lift radius to within working range of the cranes. This may require a different mix of vehicles and equipment but would not increase the duration or maximum noise levels produced. Although the construction time varies between the alternatives, the type of equipment used, construction activities, and location of work to be performed would be the same under each alternative.

Operational Impacts

Under Alternative 3, noise associated with operational impacts would be the same as the Preferred Alternative. The project is a Type III project as defined by FHWA. Operational-related changes in ambient noise levels in or near the project area would not be adverse.

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

The following mitigation measure will be used to reduce potential project-related impacts related to noise:

- **MM NOI-1 Noise:** The proposed Humboldt County noise ordinance standards described in Table 2-14 will be used during project construction to avoid or minimize the adverse effects on sensitive receptors near the project area.

2.2.8. ENERGY

REGULATORY SETTING

NEPA (42 U.S. Code [USC] Part 4332) requires the identification of all potentially significant impacts on the environment, including energy impacts.

The CEQA Guidelines (Association of Environmental Professionals 2020), Energy Conservation, state that EIRs are required to include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy.

AFFECTED ENVIRONMENT

Electricity is produced by energy resources such as water, wind, oil, gas, coal, solar, geothermal, and nuclear methods. In the community of Honeydew, as in most of the unincorporated parts of Humboldt County, electricity is provided by PG&E, which uses statewide power transmission facilities, and several local natural gas and ARB-certified diesel power generators at the Humboldt Bay Generating Station in Eureka to meet the region's power demand. Historically, the PG&E Humboldt Bay Power Plant, a nuclear facility situated on the same site as the generating station, was also used but is now nearing completion of its decommissioning, which started in 2009. Although there are utility poles in the project area (at the south edge of the intersection of Wilder Ridge Road and Mattole Road), solar, wind power, hydropower, and fossil-fuel powered generators may be used throughout the community. Most residences and businesses in Honeydew use propane for cooking and heating.

Most natural gas used in Humboldt County is produced from a PG&E natural gas transmission facility that runs from Red Bluff to Alton (Winzler and Kelly 2008). However, PG&E's online gas transmission pipeline interactive map does not show any of its natural gas pipeline alignments as extending into the Honeydew area (PG&E 2019). Electricity in the Honeydew community is supplied by PG&E. Electricity is distributed to homes and businesses via a network of overhead transmission and distribution lines. Utility poles are along the south edge of the intersection of Wilder Ridge Road and Mattole Road. The presence of publicly available underground electricity and natural gas utilities in the project area is unlikely. Energy used by vehicles and construction equipment is mostly in the form of diesel or gasoline, both of which are available for purchase at the Honeydew store.

ENVIRONMENTAL CONSEQUENCES

No-Build Alternative

Under the No-Build Alternative the existing bridge would not be modified and there would be no construction activities. No energy would be consumed or produced.

Alternative 1 - Camelback Truss Bridge

Construction Impacts

Construction impacts under Alternative 1 would be relatively similar to those described under the Preferred Alternative. Alternative 1 would be constructed in approximately 163 days. This would mean construction time would be slightly longer than the anticipated 154 days needed to construct the Preferred Alternative. Although the construction time would vary between the alternatives, the type of equipment used, construction activities, and location of work to be performed would be the same under each alternative. Ultimately, energy demand would be similar under each alternative.

Operational Impacts

Operational impacts under Alternative1 would be the same as those for the Preferred Alternative. The project is an FHWA Type III project (i.e., bridge replacement on a similar grade and alignment). A memorandum provided to the County by Caltrans (Peterson, pers. comm. 2021) acknowledged that replacement of the one-lane bridge with a two-lane structure would have no effect on traffic volumes, types, or speeds, thus neither increase nor decrease traffic volumes, traffic mix, or traffic speed. There would be no operational related changes in energy use.

Alternative 2 - Steel Girder Bridge (Preferred Alternative)

Construction Impacts

Minor amounts of energy would be used during construction of the Preferred Alternative. Construction is expected to take approximately 154 days to complete and would occur over two summer seasons. The use of construction equipment that requires petroleum-based fuels and the use of construction vehicles would be required. Energy consumption due to construction would be limited and would have an unsubstantial impact on energy supplies.

Construction would not require either the temporary or permanent relocation of an overhead utility pole and line along Burrel Road to accommodate the temporary detour. No other utilities in the project area would need to be relocated as a part of the project.

Operational Impacts

There would be no change to energy resources related to operation of the Preferred Alternative. The existing bridge would be replaced on the same alignment with a new structure. The project is not anticipated to result in substantial changes to number of truck trips, the percentage of trucks on the highway, prevailing speeds, travel times, or fuel economy of trucks or non-truck vehicles. The project would not require the use of any electrical lighting. Thus, it is anticipated that there would be no significant change in energy conservation as a result of the project.

Alternative 3 - Concrete Girder Bridge

Construction Impacts

Construction impacts under Alternative 3 would be relatively similar to those described under the Preferred Alternative. Alternative 3 would be constructed in approximately 183 days. This would mean construction time would be slightly longer than the anticipated 154 days needed to construct than the Preferred Alternative. Alternative 3 would require the use of a work trestle to shorten the lift radius to within working range of the cranes. This may require a different mix of vehicles and equipment but would not increase the duration or maximum noise levels produced. Although the construction time varies between the alternatives, the type of equipment used, construction activities, and location of work to be performed would be the same under each alternative and there would be no additional energy demand.

Operational Impacts

Operational impacts under Alternative 3 would be the same as those for the Preferred Alternative. The project is an FHWA Type III project (i.e., bridge replacement on a similar grade and alignment). There would be no increase in capacity or VMT, and there would be no operational-related changes in energy use.

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

No avoidance, minimization or mitigation measures are proposed.

2.3. Biological Environment

The Biological Environment consists of the following sections: Natural Communities, Wetlands and Other Waters, Plant Species, Animal Species, Threatened and Endangered Species, and Invasive Species. This analysis is based on the findings presented in the Natural Environment Study (NES) (Stantec 2021) and the Biological Assessment/Essential Fish Habitat Assessment (BA/EFHA) (Stantec 2020c) prepared for the project. The approximately 28.10-acre biological study area (BSA) consists of the limits of project construction disturbance (including staging areas) and a 100-foot buffer intended to account for potential indirect effects on nearby aquatic resources. The BSA includes Honeydew Bridge; a portion of the Mattole River and upland banks east and west of the bridge; and segments of Mattole Road, Burrel Road, and Wilder Ridge Road. The BSA also includes all project features, including access roads, staging areas, and the proposed temporary detour site immediately downstream of the bridge.

2.3.1. NATURAL COMMUNITIES

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

Habitat areas that have been designated as critical habitat under the FESA are discussed below in the Threatened and Endangered Species Section 2.3.5. Wetlands and other waters are also discussed in Section 2.3.2. Fish passage for those species requiring federal consultation is discussed in Threatened and Endangered Species Section 2.3.5. For the purpose of this section, the term “natural communities” is also used to describe the assemblage of plant species found in the BSA.

AFFECTED ENVIRONMENT

The BSA is centered on the mainstem of the Mattole River corridor; a wide, deeply incised and cobble-covered channel that runs generally east to west through the small mountain valley that makes up most of the community of Honeydew. Honeydew is characterized by widely dispersed rural residential and commercial development supporting ornamental, native and non-native

vegetation and a network of paved and unpaved road corridors. The Mattole River is sediment-impaired as a result of past timber harvest in the watershed, removal of riparian vegetation, landslides, and channel aggradation resulting from seismic and large rainfall events. The BSA is roughly 7 miles from the Pacific Ocean. The mountain valley topography in the BSA transitions abruptly to dense conifer forest on steep hillsides.

Vegetation communities in the BSA were classified based on the descriptions provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988) and confirmed by field surveys. The community types mapped in the BSA include barren, montane hardwood-conifer, montane riparian, annual grassland, and riverine (Figure 2-9).

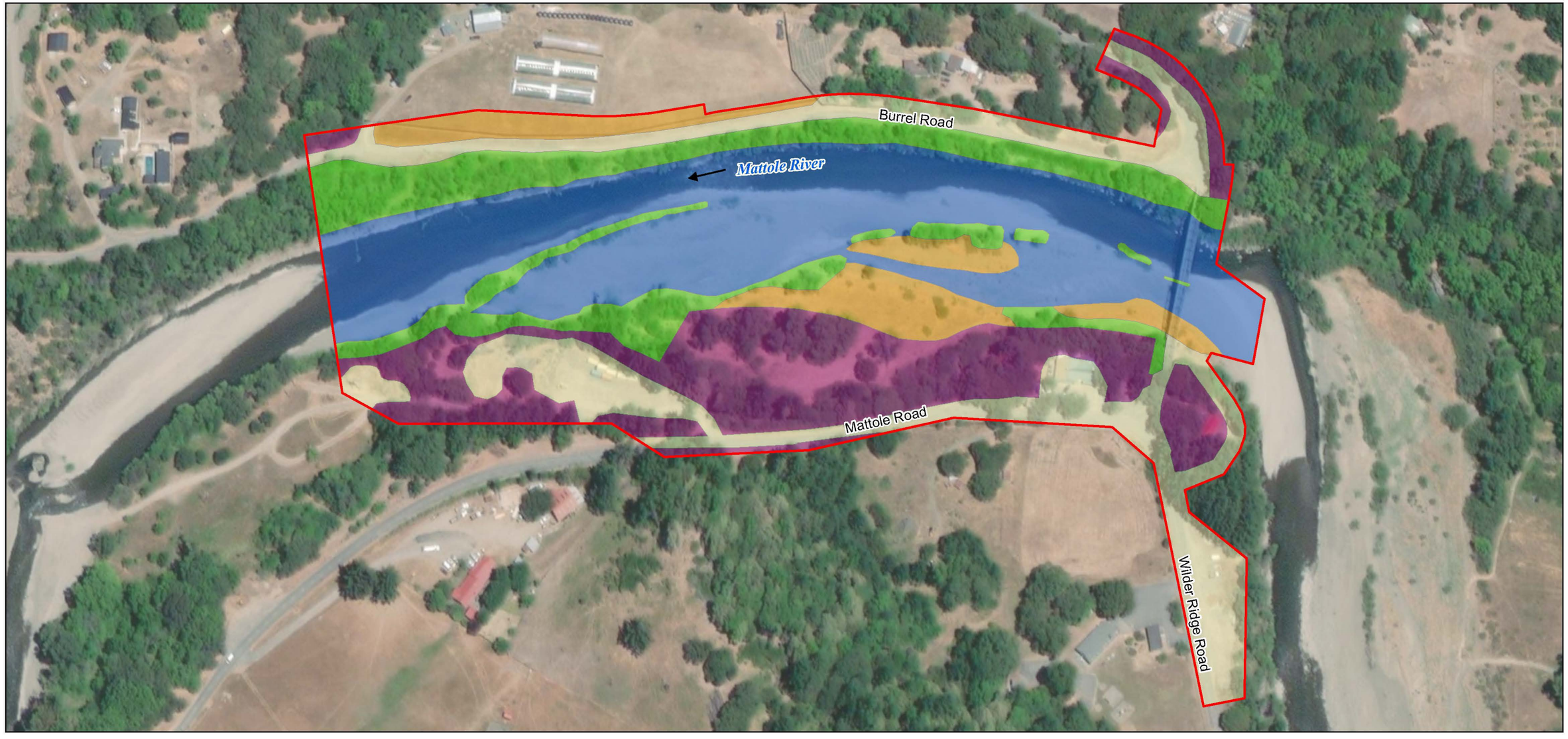
Barren

Barren areas are generally devoid of vegetation. These barren areas include the roadways and adjacent gravel and dirt shoulders in the project area. Sparse, opportunistic weedy species may be present within barren areas.

Montane Hardwood-Conifer

The montane hardwood-conifer vegetation community occurs along Mattole Road in the northeast and southwest portions of the project area. The overstory is fairly dense and is dominated by Oregon white oak (*Quercus garryana*), tan oak (*Notholithocarpus densiflorus*), Douglas-fir (*Pseudotsuga menziesii*), and bay laurel (*Umbellularia californica*). The shrub layer is fairly sparse and includes poison oak (*Toxicodendron diversilobum*) and honeysuckle (*Lonicera hispidula*). The herbaceous layer is composed of scattered forbs and grasses, including winter vetch (*Vicia villosa*), rip-gut brome (*Bromus diandrus*), miner's lettuce (*Claytonia parviflora*), and gambleweed (*Sanicula crassicaulis*).

The multilayered vegetation in the montane hardwood-conifer community type supports a variety of wildlife species. Mature, fire-damaged, and wind-damaged forests typically contain snags (dead trees that are still standing), which are a valuable resource for birds and mammals that prefer nest and den sites in cavities, such as the flammulated owl (*Otus flammeolus*) and northern pygmy owl (*Glaucidium gnoma*). Snags also support wood-boring insects that provide food for bark-gleaning insectivorous birds such as the brown creeper (*Certhia Americana*). Other birds foraging and/or breeding in this habitat include the sharp-shinned hawk (*Accipiter striatus*), American peregrine falcon (*Falco peregrinus anatum*), mountain quail (*Oreortyx pictus*), western wood-pewee (*Contopus sordidulus*), and western tanager (*Piranga ludoviciana*). Mammals found in this habitat include the northern flying squirrel (*Glaucomys sabrinus*) and bobcat (*Lynx rufus*).



Study Area (28.10 acres)

Vegetation Communities/Habitat Types

- Annual Grassland (2.37 acres)
- Barren (5.81 acres)
- Montane Hardwood-Conifer (6.08 acres)
- Montane Riparian (4.37 acres)
- Riverine (9.47 acres)

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Stantec

Project Location
Humboldt County, California

227200510
Prepared by TM on 2020-08-07
TR by ST on 2020-08-14

Client/Project
Humboldt County
Honeydew Bridge Replacement Project

Figure No.
2-9

Title
Vegetation Communities/Habitat Types

Notes
1. Coordinate System: NAD 1983 StatePlane California I FIPS 0401 Feet
2. Base map: ESRI World Imagery Web Mapping Service, Vivid, Maxar, 7/2/2019

\\VA227P.ca.fswl\227200510\00_data\gis\mxds\227200510_Figure_2_Vegetation_Community_MS.mxd Revised: 2020-08-07 By: tmooney

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Montane Riparian

The montane riparian vegetation community occurs in the Mattole River channel in the project area. While the riparian habitat is fairly established on the north bank of the river, with large red alder (*Alnus rubra*) and black cottonwood (*Populus trichocarpa*) trees, the riparian habitat along the south bank of the river is scattered and narrow, with smaller trees and shrubs. Vegetation within the floodplain on the southern side of the river appears to be lost or reduced during heavy flooding. The riparian habitat within the floodplain is dominated by red alder and black cottonwood with an understory of coastal willow (*Salix hookeriana*) and sandbar willow (*Salix exigua*). The composition of the riparian habitat changes in the area immediately south of the gravel bar in the southwest portion of the project; this portion is dominated by big leaf maple (*Acer macrophyllum*) and black cottonwood with a dense understory of Himalayan blackberry (*Rubus armeniacus*) and California blackberry (*Rubus ursinus*).

The leaf litter, fallen tree branches, and logs associated with the riparian communities provide cover for amphibians such as the western toad (*Bufo boreas*), Pacific tailed frog (*ascaphus truei*), western pond turtle (*Emys marmorata*), northern red-legged frog (*rana aurora*), and foothill yellow-legged frog (*rana boylii*). Common reptiles include the western rattlesnake (*Crotalus oreganus*), yellow-bellied racer (*Coluber constrictor*), and common kingsnake (*Lampropeltis getulus*). A variety of common bird species can be found nesting and foraging in this habitat, primarily in the riparian tree canopy. Other resident species nest and forage on or very close to the ground, usually in dense vegetation. Raptors such as the Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), and golden eagle (*Aquila chrysaetos*) have the potential to occupy this habitat as well. Small mammals, such as mice and rabbits, may burrow or find refuge in brushy thickets. Black-tailed deer (*Odocoileus hemionus*) frequently use riparian habitats, and predators, such as the raccoon (*Procyon lotor*) and long-tailed weasel (*Mustela frenata*) are attracted by the abundance of prey and cover.

Riparian habitat (montane riparian) is considered a sensitive natural community by USACE, CDFW, and Humboldt County and is present in the project area. In addition to providing habitat for many wildlife species, riparian areas provide shade, sediment, nutrient or chemical regulation, stream bank stability, and input for large woody debris or organic matter to the channel, which are necessary habitat elements for fish and other aquatic species.

Annual Grassland

Annual grassland occurs as an upland island on the gravel and sand bar of the Mattole River floodplain and also as a mowed area alongside a road in the northwest portion of the project area. The annual grassland comprises a thick herbaceous layer dominated by oat grass (*Avena barbata*), winter vetch (*Vicia villosa*), ripgut brome (*Broums diandrus*), subterranean clover (*Trifolium subterraneum*), and bur clover (*Medicago polymorpha*).

In the BSA, the annual grassland vegetation community is characterized as small pockets surrounded by montane riparian, montane hardwood-conifer, and riverine vegetation. Annual grassland habitat largely supports the same species commonly found in the surrounding habitat types.

Riverine

In the BSA, the riverine community type is characterized by the perennial Mattole River channel: a low-gradient, wide, rock (boulder, cobble, and gravel) and sand flow channel and floodplain. Riverine habitat provides a critical source of water, food, and cover for a variety of wildlife species. The most common resident freshwater fishes include the Sacramento sucker (*Catostomus occidentalis*), three-spine stickleback (*Casterosteus aculeatus*), California roach (*Lavinia symmetricus*), Sacramento pike minnow (*Ptychocheilus grandis*), and sculpin (*Cottus* sp.). Pacific anadromous fish include Pacific lamprey (*Lampetra ayresii*), California coastal Chinook salmon (*Oncorhynchus tshawytscha*), southern Oregon/northern California coasts (SONCC) coho salmon (*Oncorhynchus kisutch*), and northern California steelhead (*Oncorhynchus mykiss*).

WILDLIFE CORRIDOR

Wildlife corridors are segments of land that provide linkages between different habitats while also providing cover. On a broader level, corridors also function as travel paths for wide-ranging animals, allow for genetic interchange, and provide openings where plants can propagate. On a broader scale, wildlife corridors also are used by animal populations to move in response to environmental changes and natural disasters. Threatened and endangered animal and plant species might use wildlife corridors to further dispersal. Riparian areas along streams and rivers are often used as wildlife travel corridors. Additionally, the rivers and streams themselves may serve as migration corridors for anadromous fish. In the BSA, the Mattole River and its floodplain are used by a variety of animal and fish species; its riparian vegetation supports many plant species.

ENVIRONMENTAL CONSEQUENCES

The following assessment of environmental consequences focuses on project effects on natural communities (i.e., vegetation communities and habitat types). Project impacts on wetlands and other waters of the United States are discussed in Section 2.3.2, Wetlands and Other Waters. Project impacts on special-status plant and animal species are discussed in Section 2.3.3, Plant Species; Section 2.3.4, Animal Species; and Section 2.3.5 Threatened and Endangered Species.

No-Build Alternative

Under the No-Build Alternative the existing Honeydew Bridge would not be modified, and no construction would occur. Vegetation communities, and plant populations and wildlife use throughout the BSA and vicinity would remain consistent with existing conditions.

Alternative 1 - Camelback Truss Bridge

The effects of Alternative 1 on natural communities in the BSA and vicinity would be similar to those described under Alternative 2 (Preferred Alternative).

Alternative 2 - Steel Girder Bridge (Preferred Alternative)

Construction Impacts

Alternative 2 (Preferred Alternative) would have minor temporary and permanent impacts on vegetation communities and habitats in the BSA. Of the various vegetation community types present in the BSA, riparian habitat (montane riparian) is considered a sensitive natural community by USACE, CDFW, and the County. Approximately 0.37 acre of montane riparian habitat would be temporarily affected by project construction as a result of the temporary detour route, construction access, construction staging, and equipment operation in the floodplain. Temporary project-related impacts on other vegetation communities found in the BSA would be the result of similar activities, although temporary dewatering would be necessary to allow for construction of the new instream pier. Permanent impacts would be limited to widening of the southern Mattole Road bridge approach, the new instream bridge pier, and a new abutment at the north end of the new bridge. Temporary and permanent impacts on vegetation communities/habitat types are summarized in Table 2-15. These impacts are shown on Figure 2-10.

Table 2-15. Impacts on Vegetation Communities/Habitat Types in the Honeydew Bridge Project Biological Study Area

Vegetation Community/Habitat Type	Impacts (acres)	
	Temporary	Permanent
Annual Grassland	1.26	—
Barren	1.62	—
Montane Hardwood-Conifer	0.25	—
Montane Riparian	0.37	0.17
Riverine	2.29	0.01
Total Impacts on Vegetation Communities/Habitat Types	5.79	0.18

Project construction could temporarily inhibit the movement of wildlife throughout the BSA, particularly along the river corridor and adjacent montane riparian habitats. Areas of temporary impact could result in habitat fragmentation during construction activities through exclusion and disturbance of this habitat. The project would not, however, create any permanent barriers to wildlife passage or habitat.

AMM NAT-1 described below will be used during construction to reduce project-related impacts on the natural communities found in the BSA.

Operational Impacts

Under Alternative 2 (Preferred Alternative), the project would have no operational impacts on natural communities.

Alternative 3 - Concrete Girder Bridge

The effects of Alternative 3 on natural communities in the project area and vicinity would be similar to those described under Alternative 2 (Preferred Alternative).

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

The following AMM will be used during construction to reduce impacts on the natural communities found in the BSA:

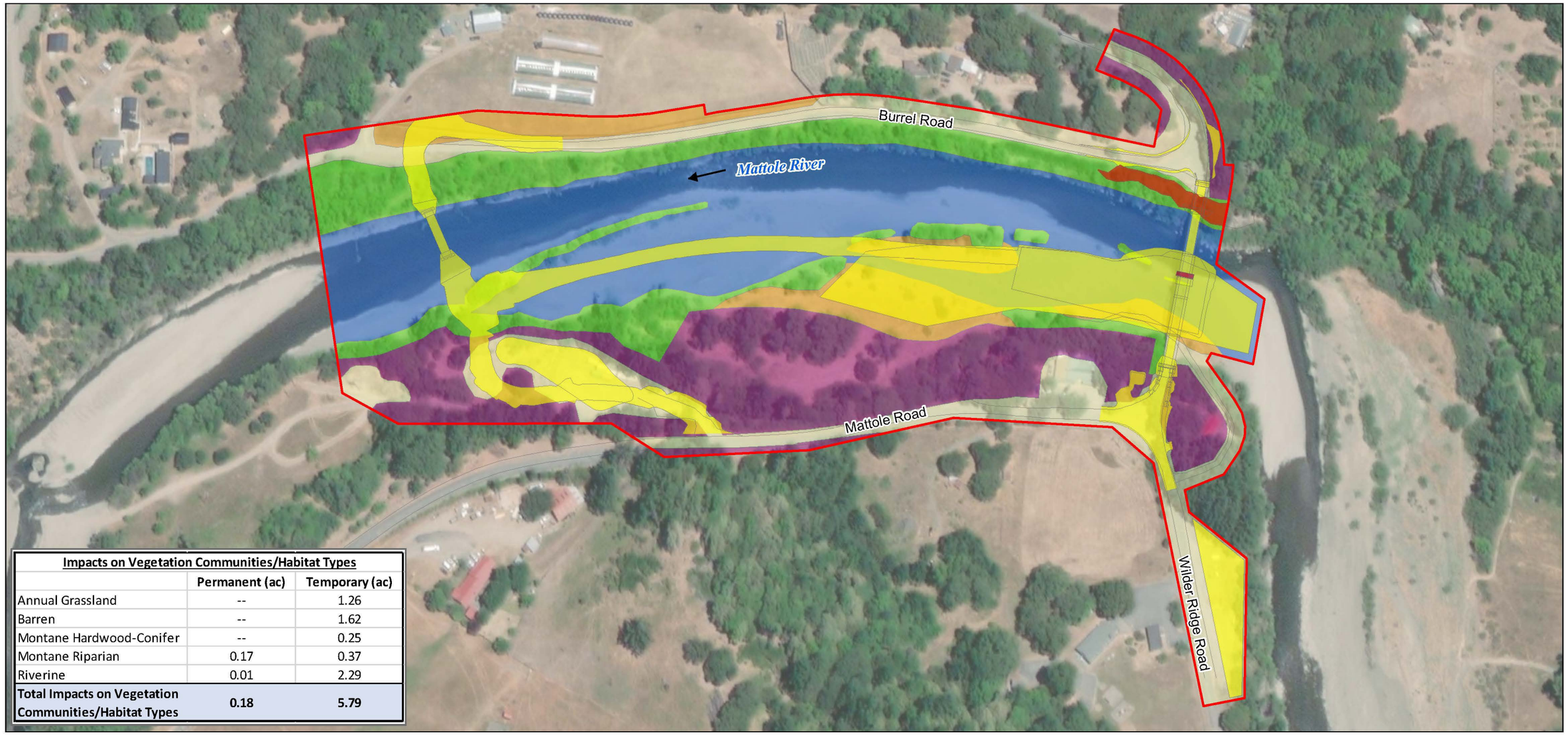
- **AMM NAT-1: Protection of Riparian Habitat.** The project was designed and will be constructed to avoid and minimize the removal of riparian vegetation to the maximum extent practicable. Staging areas and construction access routes shall avoid encroachment into riparian vegetation where practicable and minimize encroachment where complete avoidance is not practicable. “Avoided” riparian habitat shall be clearly identified in the construction drawings and contractor work plans. Exclusionary fencing shall be installed to mark boundaries of all avoided riparian areas adjacent to the work area. All pedestrian and vehicular traffic into the avoided areas shall be prohibited during construction. The exclusionary fencing shall be inspected and maintained on a regular basis throughout project construction.

2.3.2. WETLANDS AND OTHER WATERS

REGULATORY SETTING

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (CWA) (33 USC 1344), is the primary law regulating wetlands and surface waters. One purpose of the CWA is to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the United States include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. The lateral limits of jurisdiction over non-tidal water bodies extend to the OHWM, in the absence of adjacent wetlands. When adjacent wetlands are present, CWA jurisdiction extends beyond the OHWM to the limits of the adjacent wetlands. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

Section 404 of the CWA establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation’s waters would be substantially degraded. The Section 404 permit program is run by USACE with oversight by the USEPA.



Impacts on Vegetation Communities/Habitat Types		
	Permanent (ac)	Temporary (ac)
Annual Grassland	--	1.26
Barren	--	1.62
Montane Hardwood-Conifer	--	0.25
Montane Riparian	0.17	0.37
Riverine	0.01	2.29
Total Impacts on Vegetation Communities/Habitat Types	**0.18**	**5.79**

Study Area (28.10 acres)
Project Components

Impacts on Vegetation Communities/Habitat Types
Permanent Impacts (0.18 acre)
Temporary Impacts (5.79 acres)

Vegetation Communities/Habitat Types
Annual Grassland (2.37 acres)
Barren (5.81 acres)
Montane Hardwood-Conifer (6.08 acres)
Montane Riparian (4.37 acres)
Riverine (9.47 acres)

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1 inch = 200 feet (At page size of 11"x17")
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Stantec

Project Location
Humboldt County, California
227200510
Prepared by TM on 2020-08-19
TR by ST on 2020-08-19

Client/Project
Humboldt County
Honeydew Bridge Replacement Project

Figure No.
2-10

Title
Impacts on Vegetation Communities/ Habitat Types

Notes
1. Coordinate System: NAD 1983 StatePlane California I FIPS 0401 Feet
2. Base map: ESRI World Imagery Web Mapping Service, Vivid, Maxar, 7/2/2019

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USACE issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide permit may be permitted under one of USACE's Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, a USACE decision to approve is based on compliance with EPA's Section 404(b)(1) Guidelines (40 CFR Part 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines (Guidelines) were developed by USEPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the United States) only if there is no practicable alternative that would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a LEDPA to the proposed discharge that would have lesser effects on waters of the United States, and not have any other considerable adverse environmental consequences.

The EO for the Protection of Wetlands (EO 11990) also regulates the activities of federal agencies with regard to wetlands. EO 11990 states that a federal agency, such as FHWA and/or Caltrans, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: (1) that there is no practicable alternative to the construction and (2) the proposed project includes all practicable measures to minimize harm. A Wetlands Only Practicable Finding must be made.

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

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

AFFECTED ENVIRONMENT

A delineation of potential jurisdictional wetland and other waters of the United States within the BSA was conducted by Stantec on May 2, 2017, June 30, 2017, and June 11, 2020 (Stantec 2020b). The delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains Region* (USACE 2010). A total of 11.202 acres of potential waters of the United States were mapped within the BSA. Mapped features included riparian wetland (1.888 acres), and perennial stream (9.314 acres, 1,925 linear feet) and are anticipated to be subject to USACE, Regional Board, and CDFW jurisdiction. Verification of mapped waters of the United States by USACE is pending.

Riparian Wetland

Riparian wetlands meet all three federal wetland criteria—hydrophytic vegetation, hydric soils, and wetland hydrology. In the BSA, riparian wetlands (RW-1 through RW-14) (Figure 2-11) occur along the Mattole River. Dominant species include red alder, black cottonwood, coastal willow, and sandbar willow. The understory is sparse and includes scattered California blackberry and tall fescue (*Festuca arundinacea*). Wetland hydrologic processes include frequent flooding, indicated by sediment deposits and drift deposits. The soils are mostly problematic, as these features occur on sand/cobble bars within and adjacent to the Mattole River. Hydric soil indicators are often absent due to deposition of new soil material, low iron and manganese levels, and lack of organic content. The riparian wetland on the north bank of the Mattole River (RW-1) does have hydric soil indicators, as shown by the redox dark surface indicator, with distinct redox concentrations occurring as pore linings.

Perennial Stream

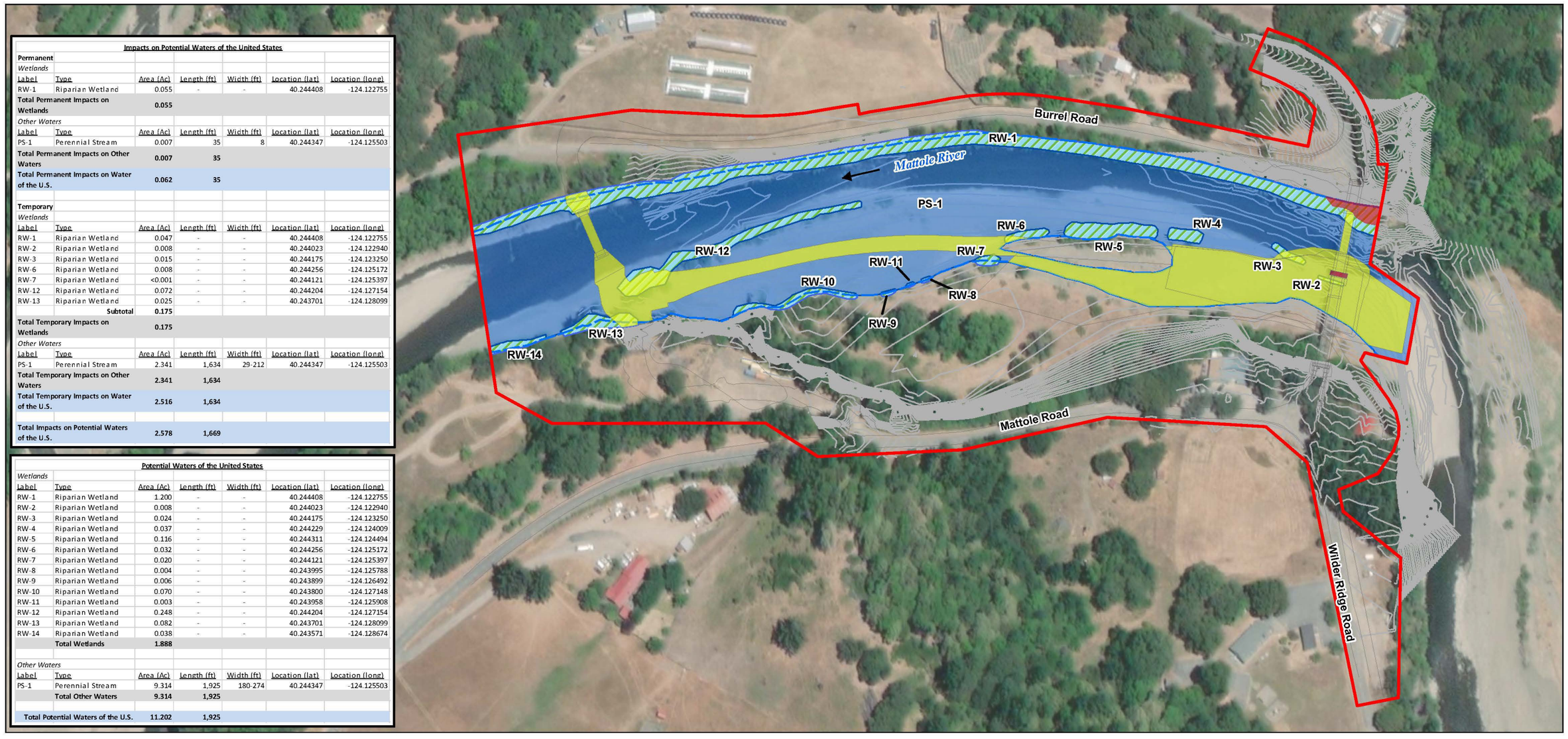
Perennial streams have flows year-round. Perennial stream waters in the BSA occur as the Mattole River. The stream has a wide channel, with a large difference between the low-flow channel and high-flow channel. While the low-flow channel is approximately 100 feet wide, the high-flow channel varies from 180 feet to 280 feet wide. Stream substrates are dominated by cobble, gravel, and sand.

Impacts on Potential Waters of the United States

Permanent						
Wetlands						
Label	Type	Area (Ac)	Length (ft)	Width (ft)	Location (lat)	Location (long)
RW-1	Riparian Wetland	0.055	-	-	40.244408	-124.122755
Total Permanent Impacts on Wetlands		**0.055**				
Other Waters						
Label	Type	Area (Ac)	Length (ft)	Width (ft)	Location (lat)	Location (long)
PS-1	Perennial Stream	0.007	35	8	40.244347	-124.125503
Total Permanent Impacts on Other Waters		**0.007**	**35**			
Total Permanent Impacts on Water of the U.S.		**0.062**	**35**			
Temporary						
Wetlands						
Label	Type	Area (Ac)	Length (ft)	Width (ft)	Location (lat)	Location (long)
RW-1	Riparian Wetland	0.047	-	-	40.244408	-124.122755
RW-2	Riparian Wetland	0.008	-	-	40.244023	-124.122940
RW-3	Riparian Wetland	0.015	-	-	40.244175	-124.123250
RW-6	Riparian Wetland	0.008	-	-	40.244256	-124.125172
RW-7	Riparian Wetland	<0.001	-	-	40.244121	-124.125397
RW-12	Riparian Wetland	0.072	-	-	40.244204	-124.127154
RW-13	Riparian Wetland	0.025	-	-	40.243701	-124.128099
	Subtotal	**0.175**				
Total Temporary Impacts on Wetlands		**0.175**				
Other Waters						
Label	Type	Area (Ac)	Length (ft)	Width (ft)	Location (lat)	Location (long)
PS-1	Perennial Stream	2.341	1,634	29-212	40.244347	-124.125503
Total Temporary Impacts on Other Waters		**2.341**	**1,634**			
Total Temporary Impacts on Water of the U.S.		**2.516**	**1,634**			
Total Impacts on Potential Waters of the U.S.		**2.578**	**1,669**			

Potential Waters of the United States

Wetlands						
Label	Type	Area (Ac)	Length (ft)	Width (ft)	Location (lat)	Location (long)
RW-1	Riparian Wetland	1.200	-	-	40.244408	-124.122755
RW-2	Riparian Wetland	0.008	-	-	40.244023	-124.122940
RW-3	Riparian Wetland	0.024	-	-	40.244175	-124.123250
RW-4	Riparian Wetland	0.037	-	-	40.244229	-124.124009
RW-5	Riparian Wetland	0.116	-	-	40.244311	-124.124494
RW-6	Riparian Wetland	0.032	-	-	40.244256	-124.125172
RW-7	Riparian Wetland	0.020	-	-	40.244121	-124.125397
RW-8	Riparian Wetland	0.004	-	-	40.243995	-124.125788
RW-9	Riparian Wetland	0.006	-	-	40.243899	-124.126492
RW-10	Riparian Wetland	0.070	-	-	40.243800	-124.127148
RW-11	Riparian Wetland	0.003	-	-	40.243958	-124.125908
RW-12	Riparian Wetland	0.248	-	-	40.244204	-124.127154
RW-13	Riparian Wetland	0.082	-	-	40.243701	-124.128099
RW-14	Riparian Wetland	0.038	-	-	40.243571	-124.128674
	Total Wetlands	**1.888**				
Other Waters						
Label	Type	Area (Ac)	Length (ft)	Width (ft)	Location (lat)	Location (long)
PS-1	Perennial Stream	9.314	1,925	180-274	40.244347	-124.125503
	Total Other Waters	**9.314**	**1,925**			
Total Potential Waters of the U.S.		**11.202**	**1,925**			



Study Area (28.10 acres)
Ordinary High Water Mark
1-ft Contours
Project Components

Impacts on Potential Waters of the United States
Permanent Impacts (0.062 acre)
Temporary Impacts (2.516 acres)

Potential Waters of the United States
Wetlands
Riparian Wetland (1.888 acres)
Other Waters
Perennial Stream (9.314 acres)

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Stantec

Project Location
Humboldt County, California
227200510
Prepared by TM on 2020-08-19
TR by ST on 2020-08-19

Client/Project
Humboldt County
Honeydew Bridge Replacement Project

Figure No.
2-11

Title
Impacts on Potential Waters of the United States

Notes
1. Delineator: Sarah Tona
2. Delineation Date: May 3, 2017 and June 19, 2020
3. Coordinate System: NAD 1983 StatePlane California I FIPS 0401 Feet
4. Base map: ESRI World Imagery, Maxar 7/2/2019

This delineation of waters of the United States is subject to verification by the U.S. Army Corps of Engineers (Corps). Stantec advises all parties that the delineation is preliminary until the Corps provides a written verification.

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ENVIRONMENTAL CONSEQUENCES

All action alternatives would result in similar levels of temporary and permanent impacts on wetlands and waters of the United States within the BSA. Alternative 2 is the least environmentally damaging practicable alternative (LEDPA) because it would require the least amount of in-river channel work.

No-Build Alternative

Under the No-Build Alternative the existing bridge would not be modified and there would be no construction activities. No USACE jurisdictional waters or wetlands would be affected.

Alternative 1 - Camelback Truss Bridge

The effects of Alternative 1 on USACE jurisdictional waters and wetlands in the BSA would be similar to those described under Alternative 2 (Preferred Alternative).

Alternative 2 - Steel Girder Bridge (Preferred Alternative)

Construction Impacts

Alternative 2 would result in approximately 2.516 acres (1,634 linear feet) of temporary impacts and 0.062 acre (35 linear feet) of permanent loss of wetlands and other waters (Figure 2-11). Temporary construction impacts on 0.175 acre of riparian wetlands and 2.341 acre (1,634 linear feet) of perennial stream (i.e., Mattole River) would be due to project construction access, creation of a temporary detour and bridge, and the placement of temporary work pads. Permanent impacts would result from the placement of permanent fill for the new center bridge pier and the southern abutment into the Mattole River channel, below the OHWM. Under Alternative 2, the existing bridge footings and concrete abutments would be removed. Areas temporarily disturbed by project construction would be restored to pre-project conditions. Figure 2-11 includes a table that summarizes the anticipated project-related impacts on waters of the United States, including wetlands.

AMM HYDRO-1 and AMM HYDRO-2 described in Section 2.2.1, Hydrology and Floodplain; AMMs AIR-1 through -6 described in Section 2.2.6, Air Quality; AMM NAT-1 described in Section 2.3.1, Natural Communities; and MMs WET-1 through -4 below will be used to avoid or reduce the level of project-related impacts on wetlands and other waters.

Operational Impacts

Under Alternative 2 (Preferred Alternative), the project would have no operational impacts on wetlands or other waters. The existing bridge would be replaced on the same alignment with a new structure and would operate in the same manner.

Alternative 3 - Concrete Girder Bridge

Construction and operational impacts on the Mattole River and wetlands for Alternative 3 would be similar to those described for Alternative 2 (Preferred Alternative); however, the use of the

standard cast-in-place concrete box girder structure proposed under Alternative 3 would require temporary in-channel falsework. There would be no impacts on waters of the United States, including wetlands, resulting from project operation.

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

Based on the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action includes all practicable measures to minimize harm to wetlands that may result from such use.

In addition to use of AMM HYDRO-1 and AMM HYDRO-2 described in Section 2.2.1, Hydrology and Floodplain; AMMs AIR-1 through -6 described in Section 2.2.6, Air Quality; and AMM NAT-1 described in Section 2.3.1, Natural Communities, the following mitigation measure will also be used to reduce the magnitude of project impacts on waters of the United States, including wetlands, in the BSA:

- **MM WET-1:** Before any discharge of dredged or fill material into waters of the United States, including wetlands, authorization under a Nationwide Permit shall be obtained from USACE. For any features determined not to be subject to USACE jurisdiction during the verification process, authorization to discharge shall be obtained from the Regional Board. For fill requiring a USACE permit, water quality certification shall be obtained from the Regional Board before discharge of dredged or fill material.

- **MM WET-2:** Before any activities that would obstruct the flow of, or alter the bed, channel, or bank of any intermittent or ephemeral creeks, notification of streambed alteration shall be submitted to the CDFW and, if required, a streambed alteration agreement shall be obtained from CDFW.

- **MM WET-3:** Any monitoring, maintenance, and reporting required by the regulatory agencies (i.e., USACE, Regional Board, and CDFW) shall be implemented and completed. All measures contained in the permits or associated with agency approvals shall be implemented.

- **MM WET-4:** Impacts on riparian wetlands will be mitigated onsite. For the purposes of this mitigation, riparian habitat is synonymous with riparian wetlands. Wetlands mitigation planting will occur on the banks of the Mattole River after the northern work pad and the temporary detour road have been removed. The plantings will be done in kind and at a 3:1 ratio.

WETLANDS ONLY PRACTICABLE ALTERNATIVE FINDING

Executive Order 11990, Protection of Wetlands (1977), calls for no net loss of habitats referred to as wetlands and established a national policy to avoid adverse effects on wetlands when there is a practicable alternative.

Each of the build alternatives would result in minor permanent impacts on wetlands (0.055 acre of riparian wetland) and other waters of the United States (0.007 acre of perennial stream).

Alternative 2 would result in the least amount of temporary impacts on jurisdictional waters since an in-channel work trestle would not be required. The project design minimized impacts on wetlands to the extent practicable. All other design considerations would have a greater impact on wetlands. MM WET 1-4 were developed to avoid or reduce impacts on wetlands and other waters to the fullest extent.

Based on the above considerations, it was determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action includes all practicable measures to minimize harm to wetlands that may result from such use.

2.3.3. PLANT SPECIES

The purpose of this section is to discusses those plant species that are not listed as threatened or endangered but do meet special-status criteria as a CDFW species of special concern; are candidates for listing as threatened or endangered by the USFWS; or are designated as rare or endangered by the California Native Plant Society (CNPS).

REGULATORY SETTING

The USFWS and CDFW have regulatory responsibility for the protection of special-status plant species. “Special-status” species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the FESA and/or the California Endangered Species Act (CESA). Please see the Threatened and Endangered Species, Section 2.3.5, in this document for detailed information about these species.

This section of the document discusses all other special-status plant species, including CDFW species of special concern, USFWS candidate species, and CNPS rare and endangered plants.

The regulatory requirements for FESA can be found at 16 USC Section 1531, et seq. See also 50 CFR Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Department projects are also subject to the Native Plant Protection Act, found at California Fish and Game Code, Section 1900-1913, and the CEQA, found at California PRC, Sections 21000–21177.

AFFECTED ENVIRONMENT

Stantec conducted a two-visit botanical survey of the BSA following the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFG 2009) (Stantec 2020a). Surveys were conducted on May 2 and June 30, 2017; timed to coincide with the blooming periods for potentially occurring special-status plant species in the BSA. No special-status plant species were documented within the BSA. Regionally occurring special-status plant species were identified based on a review of pertinent literature, the USFWS species list, California Natural Diversity Database (CNDDB) and CNPS database records, and the field survey results. The status of each special-status plant species was

verified using the *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2017a) and the *State and Federally Listed Endangered, Threatened and Rare Plants of California* (CDFW 2017b). For each species, habitat requirements were assessed and compared to the habitats in the project area and immediate vicinity to determine whether potential habitat occurs in the project area. Based on the habitat assessment, the BSA provides potential habitat for five special-status plant species (Table 2-16).

Table 2-16. Special-Status Plants Potentially Occurring in the Project Area

Common Name Scientific Name	Status[1] (Fed/State/ CRPR)	General Habitat Description	Habitat Assessment[2]	Rationale
giant fawn lily *Erythronium oregonum*	—/—/2B.2	Cismontane woodland, meadows and seeps, rocky, openings. Elevation: 330–3,770 feet. Bloom: March–June.	HP	Montane hardwood-conifer forest in the biological study area (BSA) provides potential habitat.
mahogany fawn lily *Erythronium revolutum*	—/—/2B.2	Broadleaved upland forest, North Coast coniferous forest/mesic. Elevation: 0–5,250 feet. Bloom: March–July	HP	Montane hardwood-conifer forest in the BSA provides potential habitat.
California globe-mallow *Iliamna latibracteata*	—/—/1B.2	Conifer forest, streamsides. Elevation: 200–6,000 feet. Bloom: June–July.	HP	Montane hardwood-conifer forest in the BSA provides potential habitat.
seacoast ragwort *Packera bolanderi* var. *bolanderi*	—/—/2B.2	Coastal scrub, North Coast coniferous forest, sometimes roadside. Elevation: 100–2,130 feet. Bloom: May–July.	HP	Montane hardwood-conifer forest in the BSA provides potential habitat.
white-flowered rein orchid *Piperia candida*	—/—/1B.2	Broadleaved upland forest, lower montane coniferous forest, sometimes serpentinite. Elevation: 100–4,300 feet. Bloom: May–September	HP	Montane hardwood-conifer forest in the BSA provides potential habitat.

[1] Status Codes:
California Native Plant Society California Rare Plant Ranking (CRPR) Codes and Extensions:
1B Plants rare, threatened, or endangered in California and elsewhere
2B Plants rare, threatened, or endangered in California, but more common elsewhere
xx.2 Fairly endangered in California
[2] Assessment Code. Habitat Present (HP): Habitat is present.

Vegetation community types found in the project area and the common plant species associated with those types are presented in Table 2-17.

Table 2-17. Plant Species by Vegetation Type

Vegetation Type	Potentially Affected Plant Species within Vegetation Type
Barren	Sparse opportunistic weedy species are present within barren habitat.
Montane Hardwood-Conifer	The overstory is fairly dense and is dominated by Oregon white oak (*Quercus garryana*), tan oak (*Notholithocarpus densiflorus*), Douglas-fir (*Pseudotsuga menziesii*), and bay laurel (*Umbellularia californica*). The shrub layer is fairly sparse and includes poison oak (*Toxicodendron diversilobum*) and honeysuckle (*Lonicera hispidula*). The herbaceous layer is composed of scattered forbs and grasses, including winter vetch (*Vicia villosa*), rip-gut brome (*Bromus diandrus*), miner's lettuce (*Claytonia parviflora*), and gambleweed (*Sanicula crassicaulis*).

Vegetation Type	Potentially Affected Plant Species within Vegetation Type
Montane Riparian	The riparian habitat on the north bank of the river is fairly dense, with large red alder (*Alnus rubra*) and black cottonwood (*Populus trichocarpa*) trees. The riparian habitat within the floodplain is dominated by red alder and black cottonwood with an understory of coastal willow (*Salix hookeriana*) and sandbar willow (*Salix exigua*). The composition of the riparian habitat changes in the area immediately south of the gravel bar in the southwest portion of the BSA; this portion is dominated by big leaf maple (*Acer macrophyllum*) and black cottonwood with a dense understory of Himalayan blackberry (*Rubus armeniacus*) and California blackberry (*Rubus ursinus*).
Annual grasslands	This type is composed of a thick herbaceous layer dominated by oat grass (*Avena barbata*), winter vetch, ripgut brome, subterranean clover (*Trifolium subterraneum*), and bur clover (*Medicago polymorpha*).
Riverine	The substrate is a combination of boulders, cobble, gravel, sand, and silt/clay, with no hydrophytic vegetation present.

ENVIRONMENTAL CONSEQUENCES

No-Build Alternative

Under the No-Build Alternative the project would not be constructed and no permanent or temporary impacts on special-status plants would occur.

Alternative 1 - Camelback Truss Bridge

Construction and operational impacts on the special-status plants for Alternative 1 would be similar to those described for Alternative 2 (Preferred Alternative).

Alternative 2 - Steel Girder Bridge (Preferred Alternative)

Construction Impacts

Stantec's protocol-level surveys of the BSA did not detect the presence of any special-status plant species. No adverse conditions (e.g., drought, herbivory) were encountered that would affect the identification of potentially occurring special-status plant species. Based on the findings of these surveys, construction of the project under the Preferred Alternative would have no temporary or permanent impacts on special-status plant species; however, construction would have temporary and permanent impacts on common plant species and vegetation community types identified in Table 2-17. Figure 2-10 presented in Section 2.3.1, Natural Communities, shows the areas of temporary and permanent impacts on vegetation communities.

AMM VIS-1 and AMM VIS-2 described in Section 2.1.7, and AMM NAT-1 described in Section 2.3.1 will be used to minimize project-related impacts on vegetation.

Operational Impacts

There would be no impacts on special-status species or vegetation community types related to operation of Alternative 2 (Preferred Alternative).

Alternative 3 - Concrete Girder Bridge

Construction and operational impacts on special-status plant species and vegetation types for Alternative 3 would be similar to those described for Alternative 2 (Preferred Alternative).

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

Although implementation of the project is not anticipated to affect any special-status plant species, AMM VIS-1 and AMM VIS-2 described in Section 2.1.7, and AMM NAT-1 described in Section 2.3.1 will be used to minimize project-related impacts on vegetation.

2.3.4. ANIMAL SPECIES

REGULATORY SETTING

Many state and federal laws regulate impacts to wildlife. The USFWS, the NMFS, and the CDFW are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or that are not candidates for listing as threatened or endangered under the federal or state Endangered Species Acts. Listed species are discussed in Section 2.3.5, Threatened and Endangered Species. All other special-status animal species, such as CDFW fully protected species and species of special concern, and USFWS or NMFS Service candidate species are assessed in this section.

Federal Laws and Regulations

Federal laws and regulations relevant to special-status fish and wildlife include the following:

Federal Endangered Species Act

The FESA was established to protect and recover imperiled species and the ecosystems upon which they depend. The USFWS and NMFS Service administer the act and are responsible for consulting with other federal agencies under Section 7 to ensure that their actions do not jeopardize the continued existence of plant or animal species listed, proposed for listing, or candidates for listing as threatened or endangered under the FESA, or result in the destruction or adverse modification of designated critical habitat for these species.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (MBTA) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. This treaty makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed under the act, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act protects bald and golden eagles by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit.

Clean Water Act

The objective of the CWA is to maintain and restore the chemical, physical, and biological integrity of the nation's waters. Discharge of dredged or fill material into waters of the United States, including jurisdictional wetlands, is regulated under Section 404 of the CWA by USACE via a permitting process. Applicants for Section 404 permits are also required to obtain water quality certification through the State (SWRCB or Regional Board in California) under Section 401 of the CWA.

Rivers and Harbors Act

The Rivers and Harbors Act was established in 1899 to protect navigable waters of the United States from water quality degradation and obstructions to navigation. USACE regulates the placement of structures in, under, or over navigable waters under Section 10 of the act.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act was established to conserve and manage fishery resources, including EFH for those species regulated under a federal fisheries management plan. The act requires federal agencies to consult with NMFS on any actions that may adversely affect EFH.

Executive Orders

Federal agencies are required to demonstrate that their actions comply with Presidential EOs established to protect the environment. Relevant EOs include the following:

- **EO 13112 (Invasive Species):** Federal agencies are required to prevent the introduction of invasive species and not authorize actions that could cause or promote the introduction or spread of invasive species. Federal agencies need to identify feasible and prudent measures to minimize the risk of harm caused by invasive species.

- **EO 13186 (Migratory Birds):** Federal agencies are required to evaluate the effects of their actions on migratory birds, with emphasis on species of concern, and to minimize the take of migratory birds through development of procedures for evaluating such take and conservation efforts in coordination with the USFWS. This EO further implements the MBTA and requires coordination between the USFWS and federal agencies.

STATE LAWS AND REGULATIONS

State laws and regulations relevant to fish and wildlife include the following:

California Fish and Game Code

The Fish and Game Code provides several provisions for the protection of waters of the State and the State's plant, fish, and wildlife resources, including the following relevant sections:

- **Sections 1600–1616 (Streambed Alteration):** The CDFW is responsible for the protection and conservation of fish and wildlife resources in California. Under Section 1602, CDFW has the authority to issue lake or streambed alteration agreements for construction activities that substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the CDFW as providing resources for fish or wildlife.

- **Sections 3500–3516 (Game Birds and Birds of Prey):** The CDFW protects game birds, birds of prey, migratory birds, and fully protected birds from take or possession, except as otherwise provided by the code (e.g., incidental take under CESA).

- **Sections 3511, 4700, 5050, and 5515 (Fully Protected Species):** California statutes accord a "fully protected" status to specifically identified birds, mammals, reptiles, amphibians, and fish. These species cannot be "taken," even with an incidental take permit.

AFFECTED ENVIRONMENT

The following information is based on the draft NES prepared for the project (Stantec 2021). A northern spotted owl and marbled murrelet habitat suitability assessment was conducted in the BSA on August 22, 2013. Regionally occurring special-status wildlife species were identified based on a review of pertinent literature, the USFWS species list, CNDDB records, a query of the California Wildlife Habitats Relationship system, and the field survey results. The status for each special-status wildlife species was verified using the *Special Animals List* (CDFW 2017a) and the *State and Federally Listed Endangered and Threatened Animals of California* (CDFW 2017b). For each species, habitat requirements were assessed and compared to the habitats in the BSA and immediate vicinity to determine the species' potential to occur in or near the BSA. Fourteen California species of special concern or fully protected species were considered to have at least a moderate potential to occur in the project area (Table 2-18). In addition, six federal and/or state listed as threatened or endangered species are discussed in Section 2.3.5.

Table 2-18. Special-Status Animals Potentially Occurring in the Project Area

Common Name *Scientific Name*	Status[1] (Fed/State)	General Habitat Description	Habitat Assessment[2]	Rationale
Amphibians				
Northern red-legged frog *Rana aurora*	—/SSC	Humid forests, woodlands, grasslands, and stream sides in northwestern California, usually near dense riparian cover.	HP	The Mattole River and associated riparian vegetation provides potential habitat for the species.
foothill yellow-legged frog *Rana boylii*	—/SSC	Rocky streams in a variety of habitats.	HP	The Mattole River and associated riparian vegetation provides potential habitat for the species. The California Fish and Game Commission listed four out of five clades of foothill-yellow legged frog as either threatened or endangered under CESA. The commission determined that listing under CESA was not warranted for the Northwest/North Coast clade, which occurs in the BSA region (California Fish and Game Commission 2020).
Reptiles				
Western pond turtle *Actinemys mamorata*	—/SSC	Slow water aquatic habitat with available basking sites. Hatchlings require shallow water with dense submergent or short emergent vegetation. Require an upland oviposition site in the vicinity of the aquatic site	HP	The Mattole River and adjacent upland provides potential habitat for the species.
Birds				
golden eagle *Aquila chrysaetos*	—/FP	Breeds on cliffs or in large trees or electrical towers, forages in open areas.	HP	Large trees in the BSA provide potential nesting habitat for the species.
long-eared owl *Asio otus*	—/SSC	Requires riparian habitat or live oak thickets and other dense stands of trees.	HP	Riparian vegetation in the BSA provides potential habitat for the species.

Common Name *Scientific Name*	Status[1] (Fed/State)	General Habitat Description	Habitat Assessment[2]	Rationale
northern goshawk *Accipiter gentiles*	—/SSC	Breeds in dense, mature conifer and deciduous forests, interspersed with meadows, other openings and riparian areas; nesting habitat includes north-facing slopes near water.	HP	Montane hardwood-conifer forest in the BSA provides potential habitat for the species.
olive-sided flycatcher *Contopus cooperi*	—/SSC	Breeds primarily in late-successional conifer forests with open canopies. Mostly associated with edges, openings, and clearings in otherwise relatively dense forests.	HP	Montane hardwood-conifer forest in the BSA provides potential habitat for the species.
purple martin *Progne subis*	—/SSC	Breeding habitat includes old-growth, multi-layered, open forest and woodland with snags; forages over riparian areas, forest, and woodlands.	HP	Montane hardwood-conifer forest and riparian habitat in the BSA provides potential habitat for the species.
Vaux's swift *Chaetura vauxi*	—/SSC	Prefers redwood and Douglas-fir habitats, nests in hollow trees and snags or, occasionally, in chimneys; forages aerially.	HP	Montane hardwood-conifer forest in the BSA provides potential habitat for the species.
white-tailed kite *Elanus leucurus*	—/FP	Nests in lowlands with dense oak or riparian stands near open areas, forages over grassland, meadows, cropland and marshes.	HP	Riparian vegetation and montane hardwood-conifer forest provides potential nesting habitat; open areas in the vicinity provide potential foraging habitat.
yellow-breasted chat *Icteria virens*	—/SSC	Breeds in riparian habitats having dense understory vegetation, such as willow and blackberry.	HP	Riparian woodlands in the BSA provide potential habitat for the species.
yellow warbler *Dendroica petechia*	—/SSC	Breeds in riparian woodlands, particularly those dominated by willows and cottonwoods.	HP	Riparian woodlands in the BSA provide potential habitat for the species.
Mammals				
pallid bat *Antrozous pallidus*	—/SSC	Forages over many habitats; roosts in buildings, large oaks, or redwoods, rocky outcrops, and rocky crevices in mines and caves.	HP	Honeydew Bridge and large trees provide potential roosting habitat for the species.
ring-tailed cat *Bassariscus astutus*	—/FP	Riparian habitats and in brush stands of most forest and shrub habitats. Nests in rock recesses, hollow trees, logs, snags, abandoned burrows or woodrat nests.	HP	Riparian woodlands in the BSA provide potential habitat for the species.

Common Name *Scientific Name*	Status[1] (Fed/State)	General Habitat Description	Habitat Assessment[2]	Rationale
Sonoma red tree vole *Arborimus pomo*	—/SSC	Douglas-fir, redwood, and mixed evergreen trees in fog belt. Specialized on needles of Douglas-fir and grand fir.	HP	Montane hardwood-conifer forest and riparian habitat in the BSA provide potential habitat for the species.

[1] Status Codes: State Fully Protected (FP); State Species of Special Concern (SSC).
[2] Assessment Codes. Habitat Present (HP): Habitat is or may be present. The species may be present. Present (P): The species is present. Critical Habitat (CH): BSA is within a designated critical habitat unit but does not necessarily mean that appropriate habitat is present.

Northern Red-Legged Frog

The northern red-legged frog is found in humid forests, woodlands, grasslands, and near streams, and is commonly found in lowlands or foothills. Breeding habitat is typically at permanent or temporary water sources bordered by dense herbaceous or shrubby vegetation. The Mattole River and its adjacent riparian vegetation provide potential habitat for the northern red-legged frog.

Foothill Yellow-Legged Frog

The foothill yellow-legged frog is found in or near rocky streams in a variety of habitats, including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadows. Adults often bask on exposed rock surfaces near streams. When disturbed, they dive into the water and take refuge under submerged rocks or sediments. During periods of inactivity, especially during cold weather, individuals seek cover under rocks in the streams or on shore within several feet from the water. The Mattole River and its adjacent riparian vegetation provide potential habitat for the foothill yellow-legged frog.

Western Pond Turtle

Western pond turtles are often associated with the quiet waters of rivers and streams. Within their aquatic habitat, they are found in underwater refugia such as rocks, submerged vegetation, or holes along a bank (Hays et al. 1999). They also require basking sites, such as partially submerged logs, rocks, mats of floating vegetation, and open mud banks. In colder areas, the turtles may hibernate underwater in bottom mud or in upland sites that are near water and have deep layers of duff. Overwintering and aestivation sites often occur in upland areas with deep layers of duff or leaf litter. While western pond turtle typically occupies slow moving waters or ponds, the species could utilize the deeper parts of the Mattole River in the BSA, and the BSA provides marginal habitat for the species.

Other Special-Status Birds

Special-status birds that have the potential to occur in the BSA include white-tailed kite, northern goshawk, golden eagle, long-eared owl, Vaux's swift, olive-sided flycatcher, purple

martin, yellow warbler, and yellow-breasted chat. The CNDDB does not show occurrences of these special-status bird species within Honeydew quadrangle or its seven surrounding terrestrial quadrangles, with the exception of the golden eagle, with its nearest occurrence 3 miles north of the BSA. The montane riparian habitat provides potential habitat for yellow warbler and yellow breasted chat. The remainder of the special-status bird species may utilize different components of the montane hardwood-conifer habitat, which include large trees and snags with potential cavities, forested areas with moderate canopy cover, and trees next to open areas or water for foraging purposes.

Migratory Birds and Raptors

Migratory bird species may nest in any of the habitat types within the project area except for paved road surfaces and riverine aquatic areas. Riparian woodlands are particularly attractive for nesting birds. Numerous species could also nest within montane hardwood-conifer and grassland areas. Even barren areas may be used by ground-nesting birds, such as killdeer, for nesting. The riparian and forest habitats in and near the BSA provide nesting habitat for migratory birds and raptors, which could result in active nests that could be disturbed during project construction if they are present.

Pallid Bat

The crevices under the existing Honeydew Bridge and cavities in trees within the project area provide potential roosting and maternity colony habitat for pallid bats. They typically use separate day and night roosts and, in general, day roosts are in more enclosed, protected spaces than are night roosts (Tatarian 1999). The well-protected day roosts are required for maternity roosts where the young are reared (i.e., nursery colonies). Maternity roosts are established in April, with young born in May through June. The young are typically volant (flying) by July through early August. Additionally, the surrounding annual grassland, montane riparian, and montane hardwood-conifer habitats provide potential foraging habitat. According to CNDDB, however, no occurrences of pallid bat are present within the Honeydew quadrangle and its surrounding seven terrestrial quadrangles.

Ring-Tailed Cat

The ring-tailed cat occurs in various riparian habitats and in brush stands of most forest and shrub habitats. Potential denning habitat is present within the montane riparian habitat in the project area. According to CNDDB, however, no occurrences of ring-tailed cat are present within the Honeydew quadrangle and its surrounding seven terrestrial quadrangles.

Sonoma Red Tree Vole

Large tress in the montane hardwood-conifer habitat in the project area provides potential habitat for the Sonoma red tree vole. According to CNDDB, however, no occurrences of this species are present within the Honeydew quadrangle and its surrounding seven terrestrial quadrangles.

ENVIRONMENTAL CONSEQUENCES

No-Build Alternative

Under the No-Build Alternative the project would not be constructed and no impacts on special-status wildlife species would occur.

Alternative 1 - Camelback Truss Bridge

Construction and operational impacts on the special-status animal species and migratory birds and raptors for Alternative 1 would be similar to those described for Alternative 2 (Preferred Alternative).

Alternative 2 - Steel Girder Bridge (Preferred Alternative)

Construction Impacts

Northern Red-Legged Frog, Foothill Yellow-Legged Frog, and Western Pond Turtle: Under Alternative 2 (Preferred Alternative), project construction could affect frogs and turtles in the following ways:

- Construction-related impacts, especially in-channel work, may result in adverse impacts via direct take due to operation of equipment in or adjacent to the stream channel when flowing or standing water is present.

- Activities related to project construction would result in some localized vegetation and soil disturbance. Vegetation and soil removal can accelerate erosion processes and increase the potential for sediment to enter the Mattole River. Excessive sedimentation into the stream channel has the potential to reduce habitat quality for northern red-legged and foothill yellow-legged frogs and western pond turtle.

- Construction activities typically include construction equipment refueling on location, which may result in minor or major fuel and oil spills. Without rapid containment and clean up, these materials could be potentially toxic depending on the location of the spill in proximity to surface water features.

AMM HYDRO-1 and AMM HYDRO-2 described in Section 2.2.1, Hydrology and Floodplain; AMM NAT-1 described in Section 2.3.1, Natural Communities; AMM VIS-2 described in Section 2.1.7, Visual Resources/Aesthetic, and MM BIO-1 (Project Footprint) described below will be used to minimize project-related construction impacts on northern red-legged frog, foothill yellow-legged frog, and western pond turtle.

Special-Status and Migratory Birds and Raptors: Construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Loss of fertile eggs or nesting birds, or any activities resulting in nest abandonment, may adversely affect these species. The project may also result in a small, temporary reduction of foraging or roosting habitat for these species. Due to the regional

abundance of similar habitats, however, temporary habitat loss is not expected to result in adverse impacts on these species. MM BIO-2 (Special-Status and Migratory Birds and Raptors) described below will be used to minimize project-related construction impacts on birds.

Pallid Bat: Bat species may roost individually or in small groups in tree cavities, in riparian vegetation, or under the bridge. Due to the ability of individual bats to move away from disturbance, direct impacts on bats are not expected when the bats are not in a maternity colony. Pallid bats may form maternity colonies in crevices under the bridge and large tree cavities in the BSA. If a tree that contains a pallid bat colony is removed, the removal could result in bat mortality or injury. Mortality or injury could also occur if the bridge contains pallid bat or bat maternity colonies when it is removed.

Indirect impacts may occur from construction disturbances if a maternity colony is present in or adjacent to the BSA. Considerable noise disturbance could result in adults temporarily or permanently leaving the maternity colony. MM BIO-3 (Pallid Bat) described below will be used to minimize project-related construction impacts on bats.

Ring-Tailed Cat: Direct impacts on ring-tailed cat could result from tree and other vegetation removal if these activities took place during the natal and maternal denning period (May 1–June 30). Ring-tailed cat could perish if the tree is removed while occupied by the animal.

Because ring-tailed cats commonly use multiple dens when raising their kits and move kits when disturbed, females using dens outside the vegetation removal area would likely move kits to an alternative den if disturbed by noise during construction. Indirect impacts from construction noise are not anticipated. MM BIO-4 (Ring-tailed Cat) described below will be used to minimize project-related construction impacts on ring-tailed cat.

Sonoma Red Tree Vole: No impacts on Sonoma red tree vole are anticipated to result from project construction. Large trees in montane hardwood-conifer habitat that may provide suitable habitat for this species will be removed from the BSA.

Operational Impacts

Operation of the new bridge and roadway approaches constructed under Alternative 2 (Preferred Alternative) would have no impact on special-status animal species because the new bridge and roadway improvements would follow the existing alignments.

Alternative 3 - Concrete Girder Bridge

Construction and operational impacts on special-status animal species and migratory birds and raptors for Alternative 3 would be similar to those described for Alternative 2 (Preferred Alternative).

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

In addition to using AMM HYDRO-1 and AMM HYDRO-2 described in Section 2.2.1, Hydrology and Floodplain; AMM NAT-1 described in Section 2.3.1, Natural Communities; and AMM VIS-2

described in Section 2.1.7, Visual Resources/Aesthetic, the following mitigation measures will be used:

- **MM BIO-1: Project Footprint.** The project site footprint will be restricted to the minimum area necessary to complete the project.

- **MM BIO-2: Special-Status and Migratory Birds and Raptors.** The following measures will be used to avoid or minimize project-related impacts on special-status birds in or near the vicinity of the BSA:

    - If all necessary approvals have been obtained, potential nesting substrate (e.g., trees and shrubs) that will be cut down to accommodate construction should be felled and removed before the onset of the nesting season (February 15 through August 31), if practicable. This will help preclude nesting and substantially decrease the likelihood of direct impacts.

    - No more than 15 days before construction during the nesting bird season, a pre-construction survey for nesting white-tailed kite, northern goshawk, golden eagle, long-eared owl, Vaux's swift, olive-sided flycatcher, purple martin, yellow warbler, and yellow-breasted chat shall be conducted by a qualified biologist within the BSA and a 250-foot buffer around the BSA. During this survey, the biologist shall inspect all trees, shrubs, and other potential habitat for nests. If an active nest is found within 250 feet of the construction area, appropriate conservation measures (as determined by a qualified biologist) shall be implemented. These measures may include but are not limited to establishing a construction-free buffer zone around the active nest site, biological monitoring of the active nest site, and delaying construction activities in the vicinity of the active nest site until the young have fledged. The County will inform Caltrans if such an activity occurs.

- **MM BIO-3: Pallid Bat.** The following measures will be used to avoid or minimize project-related impacts on pallid bats:

    - To the extent practicable, removal of large trees with cavities and removal of the existing bridge shall occur before maternity colonies form (i.e., before March 1) or after young are volant (i.e., after August 15). The removal of the existing bridge during this period may not be feasible, because the existing bridge must be removed during the in-water construction period (June 15 through October 15).

    - Exclusionary devices may be placed over potential bat habitat on the existing bridge between August 15 and March 1 during the year before construction to prevent bats from forming maternity colonies.

    - If construction (including the removal of large trees and the existing bridge) occurs during the non-volant season (March 1 through August 15), a qualified biologist shall conduct a pre-construction survey of the BSA to locate maternity

colonies. The pre-construction survey will be performed no more than 14 days before the implementation of construction activities (including staging and equipment access). If a lapse in construction activities for 14 days or longer occurs between those dates, another pre-construction survey will be performed. If a maternity colony is present, bridge or tree removal shall not occur until it is determined that the young are volant.

- **MM BIO-4: Ring-Tailed Cat and Sonoma Red Tree Vole.** The following measures will be used to avoid or minimize project-related impacts on ring-tailed cats and Sonoma Red Tree Vole:

  - Tree removal will be minimized, and large snags and old growth trees will be avoided, to the extent feasible.

  - Remove all trees during the non-denning period (July 1–April 30). Trees may be removed during the denning season for ring-tailed cat (May 1–June 30) if surveys during the denning season reveal no potential natal or denning/nesting trees within the removal area.

  - If vegetation removal is to occur during the denning season (May 1–June 30), a qualified biologist will survey for potential natal or maternity den trees using protocol search techniques within areas slated for vegetation removal and within 375 feet of the vegetation removal area. The survey will be performed no more than 2 weeks before the implementation of vegetation removal. During the denning period, trees that have maternal den characteristics shall be retained until the day after all other trees within a 375-foot radius have been felled.

  - If no potential denning trees are observed within 375 feet of vegetation removal, these restrictions would not be necessary.

2.3.5. THREATENED AND ENDANGERED SPECIES

REGULATORY SETTING

The primary federal law protecting threatened and endangered species is the FESA: 16 USC Section 1531, et seq. (see also 50 CFR Part 402). This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the FHWA (and the Department, as assigned), are required to consult with the USFWS and the NMFS to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement or a Letter of Concurrence. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the CESA, California Fish and Game Code Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The CDFW is the agency responsible for implementing CESA. Section 2080 of the California Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFW. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of FESA, the CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (a) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (b) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

AFFECTED ENVIRONMENT

The following information is based on the project's NES (Stantec 2021), the draft BSA/EFHA (Stantec 2020c), and the USFWS lists of threatened endangered species having the potential to occur in the BSA and vicinity. Five fish and wildlife species that are federally listed as threatened or endangered, including one bird species that is also listed by the State, and one frog species listed only by the State, could occupy the BSA based on the presence of suitable habitat (Table 2-19). The action area identified for the listed fish impact assessment, an additional 900 feet along the stream channel upstream and downstream of the bridge alignment was included in the analysis: a total of 30.20 acres. The length of river channel included in the action area, extending from 450 feet upstream of the new bridge alignment to 450 feet downstream of the temporary detour bridge, was based on highly conservative estimates of the potential hydroacoustic behavior impact distances associated with limited pile-driving and percussive concrete demolition, and potential for construction-related effects on water quality.

Table 2-19. Special-Status Animals Potentially Occurring in the Project Area

Common Name *Scientific Name*	Status[1] (Fed/State)	General Habitat Description	Habitat Assessment[2]	Rationale
Fishes				
Southern Oregon/Northern California coast (SONCC) evolutionarily significant unit (ESU) coho salmon (*O. kisutch*)	FT/CH	During spawning, females usually choose spawning sites near the head of a riffle, just below a pool, where the water changes from a laminar to a turbulent flow and there is a medium to small gravel substrate. The most productive juvenile habitats are found in smaller streams with low-gradient alluvial channels containing abundant pools formed by large woody debris.	HP, CH	The Mattole River is part of the SONCC recovery domain, comprising populations from Punta Gorda, California north to Cape Blanco, Oregon. Critical habitat is present.
California Coastal (CC) ESU Chinook salmon (*O. tshawytscha*)	FT	CC Chinook are all fall-run salmon. Spawning in the larger basins peaks between late October and December, and eggs hatch after 40–60 days. The majority of CC Chinook salmon juveniles emerge from the gravel in the late winter or spring and migrate downstream within a few months. Smolts use food-rich tidal or flooded habitats with overhanging cover or undercut banks to forage before migrating to sea.	HP, CH	Occurs in the Mattole River watershed. Critical habitat is present.
Northern California (NC) distinct population segment (DPS) steelhead (*O. mykiss*)	FT/SE (summer-run population)	NC steelhead prefer pools with boulders, large woody debris, and undercut banks that provide cover from predators and visual separation from other fishes.	HP, CH	Occurs in the Mattole River watershed. Critical habitat is present.
Birds				
marbled murrelet *Brachyramphus marmoratus*	FT/SE	Marine subtidal and pelagic habitats; requires dense, mature forests of redwood and Douglas-fir for breeding.	HP	Nesting habitat is not present within the BSA. Nesting habitat outside the BSA in the auditory disturbance buffer is not large enough to support nesting owls.
northern spotted owl *Strix occidentalis caurina*	FT/ST	In northern California, resides in large stands of old growth, multi-layered mixed conifer, redwood, and Douglas-fir habitats.	HP	While nesting habitat is not present within the BSA, second-growth forest east of the bridge provides potential habitat.

Common Name *Scientific Name*	Status[1] (Fed/State)	General Habitat Description	Habitat Assessment[2]	Rationale

[1] Status Codes: Federally Listed as Threatened (FT); State Listed as Threatened (ST); State Listed as Endangered (SE).
[2] Assessment Codes. Habitat Present (HP): Habitat is or may be present. The species may be present. Critical Habitat (CH): BSA is within a designated critical habitat unit but does not necessarily mean that appropriate habitat is present.

Northern Spotted Owl and Marbled Murrelet

The CNDDB included numerous documented occurrences of northern spotted owl and marbled murrelet within a 5-mile radius of the project site. The nearest northern spotted owl occurrence to the BSA is 2.2 miles to the southwest, while the nearest marbled murrelet occurrence to the BSA is 1.7 miles to the northeast. The detections of the marbled murrelet sites (five total) that occur roughly 2 miles northeast of the bridge site were recorded in 1989. These marbled murrelet detections were not made using established survey methods, rather, they were incidental observations and may not represent a nearby nest site. The northern spotted owl activity centers (four total) that occur from 2 to 4 miles south and southwest of the BSA were recorded in 1991, 1994, and 2004. There are no recent detections of either marbled murrelet or northern spotted owl within a 5-mile radius of the BSA.

A northern spotted owl and marbled murrelet habitat suitability assessment was conducted by a County contractor, Leopardo Wildlife Associates (LWA), in 2013 (Stantec 2020a). Caltrans completed an informal no effect determination with USFWS regarding northern spotted owl and marbled murrelet in October 2013 based on the following findings of the study:

- The CNDDB does not indicate historical northern spotted owl or marbled murrelet presence within 0.7 mile of the BSA.
- The BSA does not include designated critical habitat for these species.
- There is a 5-acre second growth montane hardwood-conifer stand of trees along the north bank of the Mattole River at the bridge site that could provide potential habitat for northern spotted owl and marbled murrelet.
- The project would not involve the removal of trees large enough to be northern spotted owl or marbled murrelet habitat.
- The 0.7-mile survey area includes a minimal amount of nesting and roosting habitat. The USFWS recommends a minimum of 200 acres of nesting and roosting habitat for a northern spotted owl activity center, of which the survey area was less than 5 percent. The stand's small size and proximity to rural residences likely precludes it from functioning as northern spotted owl nesting and roosting habitat.
- Noise disturbance from the project was considered within 1,320 feet (0.25 mile) of the BSA.

Anadromous Fishes (Southern Oregon/Northern California Coast Evolutionarily Significant Unit Coho Salmon; California Coastal Evolutionarily Significant Unit Chinook Salmon; and Northern California Distinct Population Segment Steelhead)

The Mattole River is designated critical habitat and provides potential habitat for SONCC evolutionary significant unit (ESU) coho salmon, California coastal (CC) ESU Chinook salmon, and NC DPS steelhead, all of which are federally listed as threatened species. Additionally, the summer run population of the NC DPS steelhead is State listed as endangered. The Mattole River in the BSA is mainly suitable for juvenile rearing habitat and migration corridors for all three species.

A BA/EFHA was prepared that concluded a *may affect, not likely to adversely affect* determination for the federally threatened SONCC ESU coho salmon. A *may affect, likely to adversely affect* determination was concluded for the federally threatened CC ESU Chinook salmon and the federally threatened NC Distinct Population Segment DPS steelhead. The BE/EFHA determined that the *project may affect, likely to adversely affect* SONCC ESU coho salmon, CC ESU Chinook salmon, and NC DPS steelhead designated critical habitat. The BA/EFHA was submitted to NMFS for review under Section 7 of the ESA to address potential effects to federally listed fish species and to essential fish habitat (EFH) Pacific salmon. NMFS issued a biological opinion on October 16, 2020 that concluded that the project is not likely to jeopardize the continued existence of the CC ESU Chinook salmon or the NC DPS steelhead. NMFS also concluded the project is not likely to destroy or adversely modify designated critical habitat for the two species. NMFS expected the project would result in an incidental take of CC ESU Chinook salmon or NC DPS steelhead. The biological opinion is provided as Appendix F. The project would have no effect on all other federally listed species.

ENVIRONMENTAL CONSEQUENCES

No-Build Alternative

Under the No-Build Alternative the project would not be constructed and no impacts on special-status wildlife species would occur.

Alternative 1 - Camelback Truss Bridge

Construction and operational impacts on the special-status animal species and migratory birds and raptors for Alternative 1 would be similar to those described for Alternative 2 (Preferred Alternative).

Alternative 2 - Steel Girder Bridge (Preferred Alternative)

Northern Spotted Owl and Marbled Murrelet

Construction Impacts

During construction, pile-driving and bridge demolition activities would be the greatest sources of project noise. Noises generated from these high-level noise activities would likely exceed the sound level of vehicular and truck traffic already using the bridge site during daylight hours. It is

anticipated that the action-generated sound levels would be above the ambient sounds (i.e., Ambient=High, Action-Generated=Very High or Extreme). Although traffic is heavy during summer/fall months, it is sporadic, with sound levels falling to near "natural" ambient levels intermittently. During construction, action-generated sound levels would be near-constant at times, thus there is the potential for disturbances from noise to rise to the level of harassment in and near the project area. It is estimated that approximately 35.5 acres adjacent to the BSA would be subject to harassment from auditory disturbance. Because the project would be constructed in an area where noise levels are already well above natural ambient levels and would not appreciably change the effects of the surrounding vegetation and upland areas (no removal of mature trees), the duration and significance of noise impacts will be minimal.

Large potential nest trees do not occur near the BSA, so adverse impacts from visual harassment are not anticipated. The project site does not contain densely vegetated areas with mature trees that would be considered potential habitat for northern spotted owl or marbled murrelet. The BSA comprises a wide river channel that is sparsely vegetated with grasses, shrubs, mainly non-coniferous trees (such as oak, tan oak, alder, bay, willow), and several larger Douglas-firs on the outskirts. Human presence is well established along the roadway, bridge, and river bars. Construction of Alternative 2 (Preferred Alternative) would not substantially alter that effect. The topographic features around the BSA are not likely to buffer project-generated sound, because the project would occur within a river channel and associated valley.

The study conducted by LWA (2013) determined that construction disturbance during the breeding season would not result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. This is due to the lack of suitable habitat within a 0.7-mile radius and no recent detections or observations for both bird species within a 5-mile radius. The recommended buffer needed to attenuate very high to extreme equipment noises down to existing pre-project sound levels is attainable.

It is highly unlikely that northern spotted owl or marbled murrelet would nest or use any foraging habitat within or adjacent to the BSA. Existing research and survey data (CDFW 2020) show that detections and observations for both bird species historically occurred roughly outside a 2-mile radius of the project footprint. As previously mentioned, this survey data dates back almost 30 years for marbled murrelet and 10–20 years for northern spotted owl. Critical habitat lies beyond the 2-mile radius. On-site surveys conducted by LWA showed that there is a lack of suitable habitat for northern spotted owl and marbled murrelet within a 0.7-mile radius of the BSA. It has therefore been concluded that project construction would not have a direct effect on northern spotted owl or marbled murrelet. Similarly, project construction would have no effect on designated critical habitat for northern spotted owl or marbled murrelet.

Indirect effects under the FESA are those that are caused by or will result from the proposed action and occur later in time (USFWS and NMFS 1998). Alternative 2 (Preferred Alternative) would be a short-term construction activity that would be completed within two construction seasons. The project would not substantially alter habitat suitability for northern spotted owl or marbled murrelet from existing conditions, and thus would have no indirect effects on these species or their habitats.

MM TES-1 (Northern Spotted Owl and Marbled Murrelet), described below, will be used to minimize project-related construction impacts on owls and murrelet.

Operational Impacts

Operation of the new bridge and roadway approaches constructed under Alternative 2 (Preferred Alternative) would have no impact on northern spotted owl or marbled murrelet, because operation would be consistent with existing conditions.

Anadromous Fishes (Southern Oregon/Northern California Coast Evolutionarily Significant Unit Coho Salmon; California Coastal Evolutionarily Significant Unit Chinook Salmon; and Northern California Distinct Population Segment Steelhead)

The project may result in adverse impacts on SONCC ESU coho salmon, CC ESU Chinook salmon, and NC DPS steelhead and their designated critical habitat, as described below.

- Increased turbidity and suspended sediment in the river from construction area storm water runoff and fill placements in the channel may result in reduced visibility and feeding efficiencies, altered behavior, and potential physical injury of gills and other sensitive tissues resulting in impaired respiration.

- Accidental spill of lubricants and fuels potentially may cause exposure to hazardous materials and toxicities impairing physiology and behavior or causing mortality.

- Impaired fish passage may be caused by altered hydraulics due to installation of temporary fill in the river channel for gravel work pads and the detour river crossing.

- Physical alteration of aquatic and riparian habitat may affect fish use and distribution in the action area.

- Fish relocation activities during installation of in-channel fill retention structures and any dewatering could potentially cause injury or mortality.

- Direct physical injury may result from contact and crushing by placement of construction materials in the river channel.

- Sound pressure levels caused by pile-driving and percussive demolition may potentially rise to levels exceeding underwater acoustic thresholds that can cause adverse behavioral changes.

A potential exists for these various stressors to occur simultaneously or in close succession, in which case, these stressors could have synergistic effects that are greater or different than each stressor acting alone.

MM TES-2 (Anadromous Fishes), described below, will be used to minimize project-related construction impacts on special-status fish.

Essential Fish Habitat

Essential fish habitat (EFH) for fall-run Chinook salmon could be affected by Alternative 2 (Preferred Alternative). Impacts on Chinook salmon EFH would be similar to the impacts discussed for the species.

Effects on EFH for Pacific salmonids due to the project include the potential for a temporary increase in turbidity and sediment, a temporary loss of overhead cover and shading (reduction in riparian shading), and physical changes to local bank habitat. The project would temporarily affect some principal physical or biological features of critical habitat and elements of EFH; however, the project was designed to minimize adverse impacts on this habitat. Construction activities could result in temporary and localized increases in turbidity and suspended sediment during large rain events without causing considerable long-term impacts on salmonid habitat quality. Placement of gravel pads would temporarily reduce the amount of available substrate habitat in the BSA but would have no long-term impacts. The physical or biological features of the critical habitat would not be altered or destroyed by proposed activities to the extent that the survival and recovery of affected species would be appreciably reduced. Formal consultation with NMFS under Section 7 of the ESA resulted in a determination that the action would adversely affect the EFH of Pacific Coast Salmon. The Biological Opinion is provided in Appendix F.

AMM HYDRO-1 (Erosion and Sedimentation Controls), AMM HYDRO-2 (Prevention of Accidental Spills of Pollutants), AMM NAT-1 (Protection of Riparian Habitat), AMM VIS-2 (Revegetation), AMM VIS-1 (Revegetation), and MM TES-2 (Anadromous Fish and Essential Fish Habitat) will be used to minimize project-related construction impacts on EFH.

Operational Impacts

Operation of the new bridge and roadway approaches constructed under Alternative 2 (Preferred Alternative) would have no impact on anadromous fish or EFH, because operation would be consistent with existing conditions.

Alternative 3 - Concrete Girder Bridge

Construction and operational impacts on threatened and endangered species for Alternative 3 would be similar to those described for Alternative 2 (Preferred Alternative).

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

In addition to use of AMM HYDRO-1 and AMM HYDRO-2 described in Section 2.2.1, Hydrology and Floodplain; and AMM NAT-1 described in Section 2.3.1, Natural Communities, the following mitigation measure will also be used to reduce the significance of project impacts on waters of the United States, including wetlands, in the BSA:

- **MM TES-1: Northern Spotted Owl and Marbled Murrelet.** Ambient sound level often has a substantial time-of-day component, with nighttime, dawn, and dusk ambient sound levels generally 5–10 dB lower than typical midday levels (see Appendix A in USEPA

1974). Marbled murrelet flights into nests to feed nestlings and for nest-tending exchanges are concentrated around dawn and dusk (Nelson and Hamer 1995), during the period when ambient noise levels tend to be lower than average daytime levels (USEPA 1974). Specifically, for marbled murrelet, the harassment threshold distances provided in Table 1 of the guidance document apply to noise-generating activities occurring during the midday period, when the risk of harassment is lower. The following measure is recommended to avoid the potential for adverse effects on marbled murrelet in or near the vicinity of the BSA:

- All work that produces noise greater than the existing ambient pre-project sound level (High, 81–90 dB) will be conducted during weekdays, during daylight hours beginning 2 hours after sunrise and ending 2 hours before sunset.

- **MM TES-2: Anadromous Fishes and Essential Fish Habitat.** In addition to AMM HYDRO-1 (Erosion and Sedimentation Controls), AMM HYDRO-2 (Prevention of Accidental Spills of Pollutants), AMM NAT-1 (Protection of Riparian Habitat), AMM VIS-2 (Revegetation), and AMM BIO-1 (Project Footprint), the following measures will be used to further avoid or minimize project-related impacts on anadromous fish:

  - The County shall adhere to a limited operating period during the low-flow season between June 15 and October 15, with case-by-case extensions to be reviewed and approved by NMFS and CDFW, for all wetted channel construction work and any isolating and dewatering of portions of the stream channel.

  - The County shall implement erosion control measures, including a storm water pollution prevention plan, consistent with provisions of Caltrans Standard Specifications Section 20-2 and 20-3.

  - The County shall use clean gravels (meeting Caltrans' Standard Specifications) of a size suitable for spawning salmon to create all vehicle access paths and work pads within the OHWM of the stream channel with minimal channel disturbance.

  - The County shall install fill in the wetted stream channel only within areas enclosed, using sheet pile (vibrated in) retaining systems, sandbags, portable concrete barriers, or similar approved methods to retain gravel and sediment, and turbidity controls to prevent exceedance of water quality objectives.

  - Fill containment enclosures will be installed using fish removal, relocation and exclusion methods performed by qualified biologists before placing fill. Fish removal and exclusion plans will be provided by the County for CDFW approval before beginning construction.

  - The County shall remove any crushed rock used to surface access paths and work pads but leave the clean spawning-sized gravels in the channel graded to conform to the natural streambed contours at the end of in-water construction.

- The County shall ensure that all fuel storage and refueling sites, concrete washouts, and any other hazardous materials are stored on the top of the bank at least 50 feet from surface water.

- The County shall minimize disturbance of riparian vegetation and replant any riparian areas that must be cleared or otherwise disturbed according to the project's Mitigation and Monitoring Plan.

- The County shall ensure that all construction equipment, pumps, hand tools, and personnel protective equipment that is to be used in the stream channel is subjected to inspection and appropriate treatments to prevent the spread of invasive plant and aquatic invertebrate species.

- The County shall conduct post-construction mitigation monitoring and reporting according to the mitigation provisions described in the CEQA EIR adopted by the County.

- Annual monitoring and reporting of performance of riparian wetland mitigation will be conducted for a minimum period of 3 years following construction, in accordance with the USACE regulatory program for the issuance of Department of the Army permits under Section 404 of the CWA, and the SWQCB requirements under Section 401 Water Quality Certification permitting program. All applicable regulatory agencies will be provided copies of these monitoring reports.

Terms and Conditions from the Biological Opinion. In its biological opinion, NMFS determined that the amount or extent of anticipated take, coupled with other effects of the proposed action, is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

Reasonable and Prudent Measures:

"Reasonable and prudent measures" are nondiscretionary measures that are necessary or appropriate to minimize the impact of the amount or extent of incidental take (50 CFR 402.02). NMFS believes the following reasonable and prudent measures are necessary and appropriate to minimize take of CC Chinook salmon and NC steelhead:

- Measure 1. Undertake measures to ensure that harm and mortality to threatened Chinook salmon and steelhead resulting from fish relocation activities are low.

- Measure 2. Ensure construction methods, minimization measures, and monitoring are properly implemented during construction.

- Measure 3. Prepare and submit a post-construction report regarding the effects of fish relocation and construction activities.

Terms and Conditions:

The terms and conditions described below are non-discretionary, and Caltrans must comply with them in order to implement resource protection measures RPMs (50 CFR 402.14). Caltrans has a continuing duty to monitor the impacts of incidental take and must report the progress of the action and its impact on the species as specified in this ITS (50 CFR 402.14). If the entity to whom a term and condition is directed does not comply with the following terms and conditions, protective coverage for the proposed action would likely lapse.

1. The following terms and conditions implement reasonable and prudent measure 1:

    a. Qualified biologists with expertise in the areas of anadromous salmonid biology shall conduct fish relocation activities associated with construction. Caltrans will ensure that all biologists working on the project are qualified to conduct fish relocation in a manner which minimizes all potential risks to salmonids.

    b. Salmonids shall be handled with extreme care and kept in water to the maximum extent possible during rescue activities. All captured fish must be kept in cool, shaded, and aerated water protected from excessive noise, jostling, or overcrowding or potential predators any time they are not in the stream, and fish will not be removed from this water except when released. Captured salmonids will be relocated as soon as possible to an instream location in which suitable habitat conditions are present to allow for adequate survival for transported fish and fish already present. Fish will be distributed between multiple areas if biologists judge that overcrowding may occur in a single area.

    c. If any salmonids are found dead or injured, the biologist will contact NMFS biologist Mike Kelly by phone immediately at (707) 825-1622. The purpose of the contact is to review the activities resulting in the take and to determine if additional protective measures are required. All salmonid mortalities will be retained, placed in an appropriately-sized sealable plastic bag, labeled with the date and location, fork length, and be frozen as soon as possible. Frozen samples will be retained by the biologist until specific instructions are provided by NMFS. The biologist may not transfer biological samples to anyone other than the NMFS Northern California Office in Arcata, California without obtaining prior written approval from the South Coast Branch Chief. Any such transfer will be subject to such conditions as NMFS deems appropriate.

2. The following terms and conditions implement reasonable and prudent measure 2:

    a. Caltrans shall allow any NMFS employee(s) or any other person(s) designated by NMFS, to accompany field personnel to visit the project site during activities described in this opinion.

    b. Caltrans shall contact NMFS within 24 hours of meeting or exceeding take of listed species prior to project completion. Notify Mike Kelly by phone at 707-825-

1622. This contact acts to review the activities resulting in take and to determine if additional protective measures are required.

c. Caltrans shall make available to NMFS data from the hydroacoustic monitoring on a real-time basis (i.e., daily monitoring data should be accessible to NMFS upon request).

3. The following term and condition implements reasonable and prudent measure 3:

a. Caltrans shall provide a written report to NMFS by January 15 of the year following construction of the project. The report shall be sent to NMFS via email to Mike.Kelly@noaa.gov or via mail to Mike Kelly at 1655 Heindon Road, Arcata, CA 95521. The reports shall contain, at a minimum, the following information:

Construction related activities -- The report will include the dates construction began and was completed; a discussion of any unanticipated effects or unanticipated levels of effects on salmonids, a description of any and all measures taken to minimize those unanticipated effects, and a statement as to whether or not any unanticipated effects had any effect on ESA-listed fish; the number of salmonids (by ESU and DPS) killed or injured during Project construction; and photographs taken before, during, and after the activity from photo reference points; and a qualitative assessment of the fate of individual salmonids exposed to noise above barotrauma thresholds.

Fish Relocation – The report will include a description of the location from which fish were removed and the release site(s) including photographs; the date and time of the relocation effort; a description of the equipment and methods used to collect, hold, and transport salmonids; the number of fish relocated by species; the number of fish injured or killed by species and a brief narrative of the circumstances surrounding salmonid injuries or mortalities; and a description of any problems which may have arisen during the relocation activities and a statement as to whether or not the activities had any unforeseen effects.

2.3.6. INVASIVE SPECIES

REGULATORY SETTING

On February 3, 1999, President William J. Clinton signed EO 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Federal agencies are required to identify feasible and prudent measures to minimize the risk of harm caused by invasive species.

Invasive plant species include species designated as federal noxious weeds by the U.S. Department of Agriculture, species listed by the California Department of Food and Agriculture (CDFA), and invasive plants identified by the California Invasive Plant Council (Cal-IPC). FHWA guidance issued on August 10, 1999 directs the use of the state's invasive species list, maintained by the California Invasive Species Council, to define the invasive species that must be considered as part of the NEPA analysis for a project.

AFFECTED ENVIRONMENT

Invasive plants are non-native and able to establish on many sites, grow quickly, and spread to the point of disrupting plant communities or ecosystems. Noxious weeds are a particularly troublesome category of invasive plants. They can directly or indirectly damage agriculture, recreation, natural resources, navigation, or the environment, or injure livestock. Noxious weeds can be invasive or introduced, but they can also be native or non-invasive. Road, highway, and related construction projects are some of the principal dispersal pathways for invasive plants and their propagules.

A two-visit, protocol-level botanical survey conducted by Stantec in May and June 2017 included preparation of a list of all plant species observed in the BSA identified for the project alternatives. Non-native plant species noted in the BSA were reviewed for inclusion on the federal invasive plant list (U.S. Department of Agriculture 2019), the state's noxious weed list (CDFA 2019), and invasive plants list (Cal-IPC 2019). No plant species designated as federal noxious weeds were identified in the BSA. Three species are listed as state noxious weeds, while 26 species are listed as state invasive species (Table 2-20). However, of these, only two species—French broom (*Genista monspessulana*) and Himalayan blackberry (*Rubus armeniacus*)—received a Cal-IPC category rating of "High," indicating a potential to have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure in the BSA.

Table 2-20. California Invasive Plant Council and California Department of Food and Agricultural Ratings for Non-Native Species Observed in the Honeydew Bridge Replacement Project Study Area (May and June 2017)

Scientific Name	Common Name	Rating[1]
Anthoxanthum odoratum	sweet vernal grass	Limited
Avena barbata	slender wild oat	Moderate
Brassica nigra	black mustard	Moderate
Briza maxima	large quaking grass	Limited
Bromus diandrus	ripgut grass	Moderate
Bromus hordeaceus	soft chess	Limited
Cirsium vulgare	bull thistle	Moderate*
Cynosurus echinatus	bristly dogtail grass	Moderate
Festuca arundinacea	tall fescue	Moderate
Festuca perennis	rye grass	Moderate

Scientific Name	Common Name	Rating[1]
Genista monspessulana	French broom	High*
Geranium dissectum	cut leaved geranium	Limited
Holcus lanatus	common velvet grass	Moderate
Hordeum marinum	seaside barley	Moderate
Hordeum murinum	Barley	Moderate
Hypericum perforatum	St. John's wort	Limited*
Hypochaeris glabra	cat's ear	Limited
Medicago polymorpha	california burclover	Limited
Phalaris aquatica	Harding grass	Moderate
Plantago lanceolata	English plantain	Limited
Polypogon monspeliensis	annual beard grass	Limited
Rubus armeniacus	Himalayan blackberry	High
Rumex acetosella	sheep sorrel	Moderate
Torilis arvensis	tall sock destroyer (hedge parsley)	Moderate
Trifolium hirtum	rose clover	Limited
Vinca major	greater periwinkle	Moderate

Notes: The California Invasive Plant Council (Cal-IPC) lists assign ratings that reflects its views of the statewide importance of the pest, likelihood that eradication or control efforts would be successful, and present distribution of the pest in the state. These ratings are guidelines that indicate the most appropriate action to take against a pest under general circumstances. The Cal-IPC categories indicated in the table are defined as follows:

High - These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate - These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, although establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited - These species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic. (Source: Cal-IPC 2019)

*Included on the California Department of Food and Agriculture's (CDFA) Noxious Weeds list.

ENVIRONMENTAL CONSEQUENCES

No-Build Alternative

Under the No-Build Alternative the project would not be constructed. As with any primary regional transit roadway, however, the No-Build Alternative would continue to contribute to the spread of invasive species in the BSA through the ongoing use of Mattole and Wilder Ridge Roads.

Alternative 1 - Camelback Truss Bridge

Construction and operational impacts on invasive plant species for Alternative 1 would be similar to those described for Alternative 2 (Preferred Alternative).

Alternative 2 - Steel Girder Bridge (Preferred Alternative)

Construction Criteria

Construction of Alternative 2 (Preferred Alternative) would disturb invasive plant species such as Himalayan blackberry and French broom found along existing roads and in work areas. The movement of construction equipment into and throughout the project area could aide in the dispersal of seeds and plant material, potentially transferring them to disturbed areas, which are typically susceptible to colonization or spread by invasive plants. BMPs will be used to minimize the potential spread of invasive species.

Specifications regarding vegetation and tree replacement would be provided during the design phase of the project. Caltrans Standard Specifications will control the spread or introduction of invasive species in the project vicinity (Caltrans 2018). None of the species on the California list of noxious weeds is used by Caltrans for erosion control or landscaping.

AMM INV-1 (Invasive Species), described below, will be used to minimize project-related construction impacts related to the potential spread of invasive plant species.

Operational Impacts

The potential for the incidental spread of invasive plant species (i.e., seeds) in the project area would be consistent with existing conditions. Potential sources of seed dispersal by vehicles, pedestrians, and recreationists, would continue during project operation but would not be attributable to the project, because it involves the replacement of existing infrastructure. However, as project-related revegetation planted as a part of the project becomes established, it may reduce the potential for invasive species to take root.

Alternative 3 - Concrete Girder Bridge

Construction and operational impacts on invasive plant species for Alternative 3 would be similar to those described for Alternative 2 (Preferred Alternative).

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

The following conservation measures and BMPs will be included as part of the project to reduce impacts.

- **AMM INV-1: Invasive Species.** The following conservation measures and BMPs will be included as part of the project to reduce impacts:
    - All equipment used for off-road construction activities will be weed-free before entering the BSA.

  - If project implementation calls for mulches, they will be weed-free.

  - In compliance with the EO 13112 on Invasive Species, and subsequent guidance from FHWA, the revegetation and erosion control included in the project will not use species listed as noxious weeds. Any seed mixes or other vegetative material used for revegetation of disturbed sites will consist of locally adapted native plant materials to the extent practicable.

- **AMM INV-2: Cleaning of Equipment.** All earthmoving equipment and seeding equipment would be thoroughly cleaned before arriving and exiting the project site in order to prevent the spread of noxious weeds from/to other locations.

2.4. Cumulative Impacts

This section provides information regarding past, present, and reasonably foreseeable development projects dating from 2010 onward that, together with the proposed Honeydew Bridge Replacement Project, could potentially have a substantial or considerable contribution to cumulative environmental impacts in the resource study area. This analysis reviews known projects that have affected the reach of the Mattole River in the project vicinity or the Honeydew community in the previous 10 years. The reasonably foreseeable future is generally a 20-year timeframe.

Incremental impacts that may result from the Honeydew Bridge Replacement Project are considered in the context of the cumulative condition that exists from previous human actions and in light of other reasonably foreseeable future actions. The analysis of cumulative impacts consists of (1) determining which resources would be substantially affected by the project; (2) determining whether there would be a detrimental cumulative condition within the context of impacts from past, present and other reasonably foreseeable future actions; and (3) determining whether, collectively, the project and the foreseeable condition combine to result in a cumulative impact.

2.4.1. REGULATORY SETTING

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of the project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period.

Cumulative impacts on resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of

predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

CEQA Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under CEQA can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under NEPA can be found in 40 CFR Section 1508.7.

2.4.2. RESOURCE STUDY AREA

The resources study areas (RSAs) used for cumulative analysis differ from the “study areas” used in the preceding sections to assess direct and indirect impacts on environmental resources. In a cumulative impacts analysis, each resource is assessed based on its own unique RSA, rather than the single study area, such as the project area boundary, that was used for all resources combined. For the cumulative impacts analysis, the boundaries of an RSA are also often broader, taking into account the potential effects of other reasonably foreseeable past, present, and future projects that could affect the same resources as those that would be substantially affected by the Honeydew Bridge Replacement Project.

Resources and their respective RSA included in this cumulative analysis are listed in Table 2-21. Further cumulative analysis of these resources is presented in Section 2.4.4.

Table 2-21. Cumulative Impact Analysis by Resource Area

Resource Area	Inclusion in Cumulative Analysis	Resource Study Area (RSA)
Traffic and Transportation/Pedestrian and Bicycle Facilities	Yes	Mattole Road from US 101 to Petrolia; Wilder Ridge Road and Burrel Road in the community of Honeydew
Visual/Aesthetics Environment	Yes	Community of Honeydew centered on the Mattole River channel, and the surrounding hillsides from which the bridge can be seen
Cultural Resources	Yes	Community of Honeydew
Hazards/Hazardous Materials	Yes	Southern Humboldt County
Hydrology/Floodplain	Yes	Mattole River Watershed
Water Quality and Storm Water Runoff	Yes	Mattole River Watershed
Biological Environment	Yes	Mattole River Watershed

TRAFFIC AND TRANSPORTATION/PEDESTRIAN AND BICYCLE FACILITIES

Regionally available alternative routes used to access Honeydew are limited. Mattole Road is the primary route with Wilder Ridge Road being a secondary, but substantially longer alternative. Burrel Road, the only other locally important road that would be affected by project construction, would be used to maintain through traffic during construction. The RSA for traffic and transportation facilities was determined by considering the importance of these roads both regionally and locally and the cumulative impacts of the project on traffic circulation.

VISUAL/AESTHETICS

The project would involve minor visual impacts associated with replacing the existing Honeydew Bridge. Because the existing bridge is one of only three bridges with a similar design it was a resource considered for cumulative impact analysis. The RSA for visual/aesthetics includes the area from the intersection of Wilder Ridge Road and Mattole Road to Burrel Road and the Mattole River channel. This RSA was chosen because it includes the area where the bridge is visible.

CULTURAL RESOURCES

Caltrans guidance recommends that cultural resource RSAs be defined by existing and potential historic districts, traditional cultural properties, and known tribal resources. Although the existing bridge is an important cultural resource, it is not in a designated cultural district or resource area. For the purposes of this analysis of cumulative effects on cultural resources, the RSA was defined as the Honeydew town area and the surrounding Mattole River valley.

HAZARDS/HAZARDOUS MATERIALS

The project would generate debris resulting from demolition of the existing bridge. It is anticipated that much of the bridge's materials contain hazardous materials such as lead-painted surfaces and treated wood. Because such materials must be disposed of at an off-site regional certified landfill, specific to the type of waste, the project's contribution of hazardous materials to the landfill(s) would be cumulative. Therefore, the RSA for hazards/hazardous materials was defined on a regional scale as southern Humboldt County.

HYDROLOGY/FLOODPLAIN

For evaluating the cumulative hydrology/floodplain impacts of the project, the RSA is defined as the Mattole River watershed. The Mattole River conveys substantial flows during periods of high precipitation. The broad floodplain that passes through Honeydew moderates even the largest seasonal flows (e.g., 100-year storm events), reducing the potential for localized flooding in Honeydew, including overtopping of the bridge or area roads. Although the project would be constructed during the summer low-flow period and construction criteria have been incorporated into the project design to avoid adverse impacts on the channel and the floodplain, the presence of the new bridge and its supporting substructure in the floodplain and channel should be considered for its potential to contribute cumulatively to the hydrologic and floodplain functions in the Mattole River watershed.

WATER QUALITY AND STORM WATER RUNOFF

The cumulative assessment of water quality and the impacts of storm water runoff on water quality considered the project's potential contribution to these ongoing processes in the Mattole River watershed. Extensive road systems and other land uses throughout the watershed contribute to the delivery of large amounts of sediment and diminished water quality in the Mattole River and its tributaries during precipitation events. The Mattole River is included on the CWA 303(d) list of impaired waterways due to excessive sediment and high temperatures (North Coast Regional Board 2018). Therefore, the RSA used to assess the project's cumulative contribution to water quality and storm water runoff in the Mattole River is the Mattole River watershed.

BIOLOGICAL ENVIRONMENT

The RSA defined for the project's cumulative impacts on the biological environment is the Mattole River watershed. This RSA was estimated to support the species (plants, fish, and wildlife) and environmental features (e.g., natural communities, waters, wetlands) that would potentially be affected by the project. Biological resources within this watershed have similar environmental and hydrological characteristics and support the same wetland and riparian natural communities and threatened and endangered species habitats as the project's BSA.

2.4.3. REASONABLY FORESEEABLE PROJECTS

Reasonably foreseeable projects—past (within the last 10 years), present, and future (generally a 20-year timeframe)—that have affected the Mattole River watershed or the Honeydew

community are listed in Table 2-22. These projects were identified and planned by federal, state, or local agencies. This information represents the most up-to-date information available as of the date of publication of this document.

Table 2-22. Existing and Proposed Projects Included in Cumulative Impact Analysis

Project Name and Location	Description	Potentially Affected Resources in Common with Proposed Project
Lower Mattole River Fish Habitat Improvement Project	Fish habitat improvements, including placement of large woody debris and tree planting in the Mattole River Estuary. Conducted by U.S. Fish and Wildlife Service. https://www.mattolesalmon.org/wp-content/uploads/2015/01/MSG_LWD_EstStr56_FinalReport_2011.pdf.	• Biological Resources (fish) • Water Quality • Hydrology/Floodplain
Coastal Prairie and Native Grassland Restoration Projects	Native coastal grassland restoration projects in the King Range. Conducted by Mattole Restoration Council and the Bureau of Land Management.	• Biological Resources
Estuary Restoration at the Mouth of the Mattole River	Estuary restoration project, including placement of large woody debris, tree planting, and terrace margin restoration. Conducted by the Mattole Salmon Group, Bureau of Land Management, and the Mattole Restoration Council.	• Biological Resources (fish) • Water Quality • Hydrology/Floodplain
Richardson Grove Improvement Project	Roadway alignment project to allow for industry standard-sized trucks through Richardson Grove State Park. Conducted by Caltrans District 1. https://dot.ca.gov/caltrans-near-me/district-1/d1-projects/d1-richardson-grove-improvement-project	• Traffic

2.4.4. RESOURCES WITH NO CUMULATIVE IMPACTS

If the project would not directly or indirectly impact an environmental resource, then it would not contribute to a cumulative impact on that resource. In addition, certain resources are site-specific and do not generate additional impacts when viewed in conjunction with other projects and actions. The project build alternatives assessed in this DEIR/EA would have no effect on the following environmental resources (as described in the beginning of Chapter 2) and, thus no there would be no cumulative effects:

- Coastal Zone
- Farmlands/Timberlands
- Parks and Recreational Facilities
- Growth
- Accessibility
- Wild and Scenic Rivers

Certain resources are site-specific. For some resources, use of any of the build alternatives would result in beneficial impacts, no impacts, or minor impacts that would be fully mitigated (to a less-than-significant level under CEQA). There are no known recent past, current, or future projects that would affect environmental resources associated with the Mattole River and the surrounding Honeydew community. Consequently, the contribution to a cumulative impact on

the following resources would not be considerable. Through the evaluation presented in Chapter 2 of this DEIR/EA, it was also determined that the following resource areas are in generally good health and would not be cumulatively considerable:

- Land Use
- Community Impacts
- Relocation and Real Property Acquisition
- Environmental Justice
- Utilities/Emergency Services
- Paleontology
- Air Quality
- Energy

2.4.5. RESOURCES ANALYZED

The *Interim Guidance: Questions and Answers Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA Process Guidance for Preparers of Cumulative Impact Analyses* (FHWA 2003) states that cumulative impact analyses should focus on resources in poor or declining health or resources that are substantially affected by the project. For the purposes of the Draft EIR/EA, the following resources were evaluated for cumulative impacts based on their project-level impacts:

- Visual/Aesthetics Environment
- Cultural Resources
- Hazards/Hazardous Materials
- Traffic and Transportation/Pedestrian and Bicycle Facilities
- Hydrology/Floodplain
- Water Quality and Storm Water Runoff
- Biological Environment: state and federally listed species and their critical habitats, state species of special concern, wetlands, and the riparian area of the Mattole River

HUMAN ENVIRONMENT

Traffic and Transportation/Pedestrian and Bicycle Facilities

Mattole Road is the only rural major collector road into Honeydew and this part of southern Humboldt County, connecting small, isolated communities. Although Wilder Ridge Road is a secondary alternative route, it is classified as a lesser road (i.e., minor collector) and would add considerable travel time to reach the same destinations served by Mattole Road. Additionally, the Honeydew Bridge on Mattole Road is the only regional crossing of the Mattole River and provides a critical connection for the Honeydew community, which straddles both sides of the river. It is used by not only motor vehicles, but also by pedestrians and bicyclists.

The project design includes a temporary 0.6-mile detour to maintain all modes of through traffic including motorized, nonmotorized, and pedestrian. Structurally, the temporary detour would be capable of carrying 80,000-pound loads (i.e., the weight of a highway legal tractor/trailer combination). Use of the temporary detour would avoid road closures and other impediments to

the continued use of these regionally important roads during construction. There is no other planned road work on Mattole Road or Wilder Road concurrent with the project (Table 2-22). Although temporary traffic controls, such as short-term delays needed for the passage of one-way traffic through the detour, would be necessary, the incremental impacts on regional and local traffic during project construction would not be cumulatively considerable.

Visual/Aesthetics

Replacement of the unique and historic Honeydew Bridge would change the existing aesthetic and visual character of the Mattole River corridor in the community of Honeydew. The existing bridge is one of only three bridges with a similar design and was a resource considered for cumulative impact analysis. From where it is visible, the existing bridge dominates the landscape. Its removal and replacement with a lower-profile or even a somewhat similar structure in the same alignment would permanently change the visual character of the community. Areas temporarily disturbed by the project would be restored to pre-project conditions and where suitable, revegetated. While the impact would initially be considerable, it would diminish over time as viewers adjust to the new aesthetic. No other closely related projects were identified that would affect the visual resources and aesthetics associated with the Honeydew community, the effects of the project would not be cumulatively considerable.

Cultural Resources

The Honeydew Bridge is an important historical resource, eligible for listing in the NRHP under Criterion C. Its removal will be an unavoidable adverse effect but will be done so in consultation between Caltrans and SHPO, and in accordance with the Section 106 PA. As defined by its RSA, however, the effect would be localized; the bridge is not a component of a designated cultural district or resource area. In addition, despite the intensive identification effort employed during the investigation of cultural resources conducted for the project, no artifacts, features, sites, or other cultural resources were identified aside from the existing Honeydew Bridge. Although the direct effect on cultural resources would be substantial, effects would not be cumulatively considerable, because there are no other known comparable projects and because of the isolated nature of the project.

Hazards/Hazardous Environment

Construction of the project may involve the handling of potential hazardous waste/materials. Bridge debris, including painted surfaces and treated wood waste, will require special handling and disposal. Federal and state requirements for projects involving hazardous waste/materials handling and disposal will be used. No projects that produce considerable volumes of hazardous waste/materials were identified. Under the project, disposal of bridge debris during demolition at certified landfill(s) would cumulatively contribute to the volume of hazardous debris and waste contained in certified landfills, but the contribution would be minor and would not be cumulatively considerable.

PHYSICAL ENVIRONMENT

Hydrology and Floodplain

Project construction in the floodplain and active flow channel of the Mattole River would be temporary and would occur during the summer low-flow period to avoid considerable impacts on hydrology and the floodplain. The replacement bridge would not impair the flood channel's capability to convey Q100 flood events. Project construction criteria includes methods for floodplain protections. Restoration projects in the Mattole River watershed (Table 2-22) are intended to restore hydrologic function. There would be no incremental impacts of the project that would be cumulatively considerable to the hydrology and floodplain of the Mattole River.

Water Quality and Storm Water Runoff

Although project construction could temporarily increase turbidity and suspended solids in the Mattole River, these impacts would be mitigated by the use of AMMs and BMPs. Restoration projects in the Mattole River watershed (Table 2-22) are intended to enhance water quality and moderate storm water runoff. There would be no incremental impacts of the project that would be cumulatively considerable to the Mattole River's water quality or as a result of storm water runoff.

BIOLOGICAL ENVIRONMENT

Natural Communities

Permanent vegetation removal of montane riparian habitat for project construction would be minor (approximately 0.37 acre) because the removal would occur in existing road alignments. Temporarily disturbed areas would be revegetated. There are no known recent past, present, or future projects that would affect the similar riparian vegetation along the Mattole River watershed. Avoidance, minimization, and mitigation measures described in Section 2.3.1 will be used to further protect natural communities during construction. The incremental effects of project construction on natural communities would not be cumulatively considerable.

Wetlands and Other Waters

Avoidance, minimization, and mitigation measures described in Section 2.3.2 will be used to reduce or avoid project construction impacts on wetlands and other waters. Impacts on wetlands and other waters would be minor—approximately 2.324 acres (1,232 linear feet) of temporary impacts and 0.007 acre (30 linear feet) of permanent loss of wetlands and other waters; temporary impacts on 0.176 acre of riparian wetlands and 2.148 acre (1,232 linear feet) of perennial stream (i.e., Mattole River)—with areas of temporary impacts being restored to pre-project conditions or better at project completion. There would be no permanent impacts on other waters resulting from project implementation and the incremental permanent effects of the project on wetlands would not be cumulatively considerable.

Plant Species

Protocol-level botanical surveys for special-status plant species did not detect the presence of any special-status plant species that would be affected by project construction or operation. The project would not contribute cumulatively to the incremental effects on special-status plants associated with projects in the Mattole River watershed.

Animal Species

Avoidance, minimization, and mitigation measures described in Section 2.4.4 will be used to reduce or avoid project construction impacts on special-status animal species. Aligning the project in the existing Mattole Road, Wilder Road, and Burrel Road corridors will further reduce the potential for adverse effects on animal species that might occur in the BSA, and cumulatively, throughout the Mattole River watershed. There would be no incremental impacts on animal species that would be cumulatively considerable resulting from the project.

Threatened and Endangered Species

The potential for several animal species listed as threatened or endangered was assessed for project-related impacts. Avoidance and minimization, and mitigation measures described in Section 2.4.5 will be used to avoid major impacts on anadromous fish, marbled murrelet, and northern spotted owl and their habitats. Alignment of the project in existing road corridors and construction during periods of low flow in the Mattole River will be used to further reduce the potential for adverse impacts on these species. There are no other recent past, present, or future projects known that would potentially affect threatened or endangered species in the Mattole River/Honeydew area. There would be no incremental impacts on threatened and endangered species that would be cumulatively considerable resulting from the project.

Invasive Species

The potential for the project to cumulatively contribute to the spread of invasive species in the RSA would be low. The AMMs described in Section 2.4.6 will be used during construction to prevent the spread of invasive species. Revegetation using native vegetation in temporarily disturbed areas and the use of existing road corridors in the project design would reduce the potential for the spread of invasive species through the project area. The incremental impacts of project construction and operation potential to spread invasive species would not be cumulatively considerable.

Chapter 3. CEQA Evaluation

3.1. Determining Significance under CEQA

Caltrans, as assigned by the FHWA, is the lead agency under CEQA for the project and the FHWA is the lead agency under NEPA. The FHWA's responsibility for environmental review, consultation, and any other actions required by applicable federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 USC 327 and the Memorandum of Understanding dated December 23, 2016 and executed by FHWA and Caltrans.

One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an Environmental Impact Statement (EIS) or a lower level of documentation will be required. NEPA requires that an EIS be prepared when the proposed federal action (project) *as a whole* has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an EIS, it is the magnitude of the impact that is evaluated, and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.

CEQA requires Caltrans to identify each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an EIR must be prepared. Every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list a number of "mandatory findings of significance," which also require the preparation of an EIR. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance.

3.2. Discussion of Significance of Impacts

The CEQA Environmental Checklist (below) includes physical, biological, social, and economic factors that might be affected by the build alternatives. The determinations of significance made for the CEQA Checklist were based on the technical studies and findings from analyses in Chapter 2 of the DEIR/EA. This evaluation of environmental impacts is based on the list of questions provided in Appendix G of the CEQA 2020 Guidelines. These questions result in significance determinations of no impact, less-than-significant impact, less-than-significant impact with mitigation, and potentially significant impact.

Project features, which can include both design elements of the project, and standardized measures that are applied to all or most Caltrans projects such as BMPs and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the project and have been considered prior to any significance determinations documented below; see Chapters 1 and 2 for a detailed discussion

of these features. The annotations to this checklist are summaries of information contained in Chapter 2 in order to provide the reader with the rationale for significance determinations; for a more detailed discussion of the nature and extent of impacts, please see Chapter 2. This checklist incorporates by reference the information contained in Chapters 1 and 2.

The assessment of potential resource impacts presented in this section, considers all three project build alternatives. All three build alternatives would follow the same alignment and construction criteria, differing only in bridge styling; therefore, impacts would be similar for each alternative, unless otherwise noted.

3.2.1. AESTHETICS

Except as provided in Public Resources Code Section 21099, would the project:	Significant and Unavoidable Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?				**X**
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	**X**			
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from 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?	**X**			
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			**X**	

CEQA SIGNIFICANCE DETERMINATIONS FOR AESTHETICS

a) No Impact. There are no scenic vistas in the project area.

b) Significant and Unavoidable Impact. The project proposes total replacement of the historic Honeydew Bridge—a structure that was determined eligible for listing in the NRHP in 2003 and is a historic property for compliance with Section 106 of the NHPA (JRP 2013). The bridge's camelback truss construction makes it a rare and significant bridge type. It is one of only three bridges of this type in the state that is within a public roadway. Although the bridge has been subject to contemporary repairs, it has retained its historic integrity. Its replacement is necessary because it does not meet modern transportation and safety standards. Build Alternative 1 would be the most similar in design to the existing bridge but would have a limited overhead clearance that makes this alternative inconsistent with the project's stated purpose and need. Build Alternatives 2 and 3 would be variations of a lower-profile concrete slab structure. Neither build Alternative 2 nor 3 would include any visually unique features. Although

Mattole Road is not a designated state scenic highway, the historic bridge is an important part of the visual character of the community. Its removal and replacement with a visually dissimilar structure would be a significant visual impact; however, it is anticipated that most viewers would acclimate to the new visual environment relatively quickly.

c) Significant and Unavoidable Impact. The visual character of the community of Honeydew would change due to loss of its historic bridge and replacement with a modern structure; however, its replacement is needed for safety and practicality. The project was designed to minimize impacts to the extent practicable, including replacement within the existing bridge and road approach alignments. The proposed use of a lower-profile structure (such as proposed under build Alternatives 2 and 3) would enhance views of the natural viewshed by reducing the appearance of the human-made structure. The County understands the importance of the existing bridge to the community and has included an interpretive commemorative monument in its project design.

d) Less-than-Significant Impact. The project would temporarily increase the potential for glare emanating from the project area during construction due to the presence of construction equipment and the removal of vegetation. Gravel material used to construct temporary work pads in the Mattole River floodplain would not substantially contribute to the potential for glare due to the relatively minor amount of additional material that would be temporarily deposited into the expansive floodplain. There would be some potential for additional glare to occur resulting from the permanent removal of vegetation to create the new bridge approaches; however, this would be a localized, seasonal occurrence. The project would not introduce any new light sources or materials prone to glare. Because it would follow the existing alignment, headlights of vehicles traveling through the area would result in no new impacts. Potential glare from vehicles using the temporary detour route would be buffered by surrounding vegetation, topography, and the absence of any sensitive receptors (e.g., residences) in line with the road.

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

Avoidance and Minimization Measures

The following AMMs would be used during construction to reduce impacts on the visual environment:

- **AMM VIS-1:** Manipulate landscape components such as landform and vegetation to control the visibility of project actions from the more visibly sensitive areas, such as recreational locations along the Mattole River or the Honeydew Country Store/Post Office. Avoid tree removal in and adjacent to recreation sites.

- **AMM VIS-2:** Revegetate cut or fill slopes where trees were removed using native shrubs, grasses, and forbs, and replace riparian trees if any are removed from riparian areas as a result of construction.

- **AMM VIS-3:** Use construction materials that are visually compatible with the landscape (e.g., non-glare metal guard rails and low-chroma pavement consistent with colors found

in the adjacent landscape). Use reflective road paint (if pavement is used) and highly reflective signs only as required by law.

- **AMM VIS-4:** Minimize road cut slope gradients to blend with the adjacent topography.

Mitigation Measures

No project-specific mitigation is required for this environmental resource issue.

3.2.2. AGRICULTURE AND FOREST RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the CAL FIRE regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the ARB.

Would the project:	Significant and Unavoidable Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				**X**
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				**X**
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				**X**
d) Result in the loss of forest land or conversion of forest land to non-forest use?				**X**
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				**X**

CEQA SIGNIFICANCE DETERMINATIONS FOR AGRICULTURE AND FOREST RESOURCES

No Impact. The project would not affect any farmlands or timberlands. The project includes replacement of the existing bridge and the construction of a detour bridge downstream. There are no designated farmlands, or land under a Williamson Act contract, or timberlands that would be affected by the project.

3.2.3. AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

Would the project:	Significant and Unavoidable Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?				**X**
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard?			**X**	
c) Expose sensitive receptors to substantial pollutant concentrations?			**X**	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			**X**	

CEQA SIGNIFICANCE DETERMINATIONS FOR AIR QUALITY

a) No Impact. The Honeydew Bridge Replacement Project is identified within the most recent RTP and does not conflict with the Air District PM_{10} Attainment Plan.

b) Less-than-Significant Impact. The project would generate emissions from construction equipment exhaust, worker travel, materials and equipment deliveries, and fugitive dust from earthmoving activities. Construction would produce short-term increases in emissions of particulate matter ($PM_{2.5}$ and PM_{10}), ozone precursors, reactive organic compounds (ROG), nitrogen oxides (NOX), and CO, and would generate DPM.

Project construction over two construction seasons would involve a variety of worker cars, trucks, and equipment for up to 10 hours per day. Construction equipment and vehicles would be used intermittently, and the amount of use would vary day to day. Fugitive dust (PM_{10}) would be generated from earthmoving activities and hauling on dirt roads. Heavy-duty, off-road construction equipment and heavy trucks powered by gasoline and diesel engines would generate PM exhaust emissions, ROG, NO_X, CO and DPM. These short-term increases in emissions would be temporary and localized but would not be expected to contribute

substantially to regional air quality. Project emissions are not anticipated to conflict with the PM_{10} attainment plan or lead to an exceedance of regional air quality standards. In addition, the project would implement Air District-recommended best management practices (BMPs) for fugitive dust control and construction vehicle emissions reductions.

c) Less-than-Significant Impact. Nearby sensitive receptors may be exposed to temporary and intermittent construction emissions, fugitive dust, and odors, but these emissions would not be considered substantial pollutants. The AMMs identified below will be used to further reduce impacts from fugitive dust and exhaust during construction. Therefore, the project would have a less-than-significant impact on air quality standards and nearby sensitive receptors.

d) Less-than-Significant Impact. Construction activities would involve the use of gasoline or diesel-powered equipment that emits exhaust fumes. Construction would also involve asphalt paving, which has a distinctive odor during application. These activities would take place intermittently throughout the workday, and the associated odors are expected to dissipate within the immediate vicinity of the work area. Persons near the construction work area may find these odors objectionable. However, the limited number of receptors, infrequency of the emissions, rapid dissipation of the exhaust into the air, and short-term nature of the construction activities would result in less-than-significant odor impacts.

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

Avoidance and Minimization Measures

The project would include implementation of the following AMMs during construction as recommended by the Air District:

- **AMM AIR-1:** Cover open-bodied trucks when used for transporting materials likely to give rise to airborne dust.
- **AMM AIR-2:** Install and use hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Employ containment methods during sandblasting and other similar operations.
- **AMM AIR-3:** Use water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or clearing of land.
- **AMM AIR-4:** Apply asphalt, rock, or water on dirt roads, material stockpiles, and other surfaces that can give rise to airborne dusts.
- **AMM AIR-5:** Pave and maintain roadways in a clean condition.
- **AMM AIR-6:** Promptly remove earth or other track-out material from paved streets onto which earth or other material has been transported by trucking or earthmoving equipment, erosion by water, or other means.

- **AMM AIR-7:** Comply with Title 13 CCR 2485, which restricts idling of construction vehicles to no longer than 5 consecutive minutes.

Mitigation Measures

No project-specific mitigation is required for this environmental resource issue.

3.2.4. BIOLOGICAL RESOURCES

Would the project:	Significant and Unavoidable Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or NMFS?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			X	
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		X		
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

CEQA SIGNIFICANCE DETERMINATIONS FOR BIOLOGICAL RESOURCES

a) Less-than-Significant Impact with Mitigation Incorporated. An NES report (Stantec 2021), which analyzes the project impacts on biological resources was prepared for the project. No special-status plant species were detected by Stantec during its protocol-level surveys of the project area in May and June 2017. The botanical surveys were conducted during the correct identification period for special-status plant species that have the potential to occur in the BSA.

Thus, implementation of any of the build alternatives would not adversely affect special-status plant species.

Suitable habitat does occur in the project area for the following special-status fish and wildlife species:

- SONCC ESU coho salmon (*Oncorhynchus kisutch*) - Federally listed as Threatened; Critical Habitat
- CC ESU Chinook salmon (*O. tshawytscha*) - Federally listed as Threatened
- NC DPS steelhead (*O. mykiss*) - Federally listed as Threatened; State Listed as Endangered (summer-run population)
- marbled murrelet (*Brachyramphus marmoratus*) - Federally listed as Threatened; State listed as Endangered
- Northern spotted owl (*Strix occidentalis caurina*) - Federally listed as Threatened; State Listed as Threatened
- Foothill yellow-legged frog (*Rana boylii*) - Species of Special Concern
- Northern red-legged frog (*Rana aurora*) - Species of Special Concern
- western pond turtle (*Actinemys marmorata*) - Species of Special Concern
- golden eagle (*Aquila chrysaetos*) - State listed as Fully Protected
- long-eared owl (*Asio otus*) - Species of Special Concern
- northern goshawk (*Accipiter gentiles*) - Species of Special Concern
- olive-sided flycatcher (*Contopus cooperi*) - Species of Special Concern
- purple martin (*Progne subis*) - Species of Special Concern
- Vaux's swift (*Chaetura vauxi*) - Species of Special Concern
- white-tailed kite (*Elanus leucurus*) - State listed as Fully Protected
- yellow-breasted chat (*Icteria virens*) - Species of Special Concern
- yellow warbler (*Dendroica petechia*) - Species of Special Concern
- pallid bat (*Antrozous pallidus*) - Species of Special Concern
- ring-tailed cat (*Bassariscus astutus*) - State listed as Fully Protected
- Sonoma red tree vole (*Arborimus pomo*) - State listed as Fully Protected

Fish. The project may result in adverse impacts on SONCC ESU coho salmon, CC ESU Chinook salmon, and NC DPS steelhead and their designated critical habitat, as described below.

- Increased turbidity and suspended sediment in the river from construction area storm water runoff and fill placements in the channel may result in reduced visibility and feeding efficiencies, altered behavior, and potential physical injury of gills and other sensitive tissues resulting in impaired respiration.

- Accidental spill of lubricants and fuels potentially may cause exposure to hazardous materials and toxicities, impairing physiology and behavior or causing mortality.

- Impaired fish passage may be caused by altered hydraulics due to installation of temporary fill in the river channel for gravel work pads and the detour river crossing.

- Physical alteration of aquatic and riparian habitat may affect fish use and distribution in the action area.

- Fish relocation activities during installation of in-channel fill retention structures and any dewatering could potentially cause injury or mortality.

- Direct physical injury may result from contact and crushing by placement of construction materials in the river channel.

- Sound pressure levels caused by pile-driving and percussive demolition may potentially rise to levels exceeding underwater acoustic thresholds that can cause adverse behavioral changes.

- No take for adults is anticipated; however, it is estimated that one summer run steelhead juvenile could be taken per construction season. A consistency determination that tiers from an amended B), pursuant to California Fish & Game Code Section 2080.1, will be issued by CDFW before project construction.

A potential exists for these various stressors to occur simultaneously or in close succession, in which case, these stressors could have synergistic effects that are greater or different than each stressor acting alone.

Mitigation measure MM TES-2 (Anadromous Fishes), described below, will be used to minimize project-related construction impacts on special-status fish.

Essential Fish Habitat

Essential fish habitat (EFH) for fall-run Chinook salmon could be affected by the build alternatives. Impacts on Chinook salmon EFH would be similar to the impacts discussed for the species.

Effects on EFH for Pacific salmonids due to the project include the potential for a temporary increase in turbidity and sediment, a temporary loss of overhead cover and shading (reduction in riparian shading), and physical changes to local bank habitat. The project would temporarily affect some principal physical or biological features of critical habitat and elements of EFH; however, the project was designed to minimize adverse impacts on this habitat. Construction activities could result in temporary and localized increases in turbidity and suspended sediment during large rain events without causing significant long-term impacts on salmonid habitat quality. Placement of gravel pads would temporarily reduce the amount of available substrate habitat in the BSA but would have no long-term impacts. The physical or biological features of the critical habitat would not be altered or destroyed by proposed activities to the extent that the survival and recovery of affected species would be appreciably reduced. Formal consultation with NMFS under Section 7 of the ESA resulted in a determination that the action would adversely affect the EFH of Pacific Coast Salmon. The Biological Opinion is provided in Appendix F.

AMM HYDRO-1 (Erosion and Sedimentation Controls), AMM HYDRO-2 (Prevention of Accidental Spills of Pollutants), AMM NAT-1 (Protection of Riparian Habitat), AMM VIS-2 (Revegetation), and AMM VIS-1 (Revegetation), and MM TES-2 (Anadromous Fish and Essential Fish Habitat) will be used to minimize project-related construction impacts on EFH.

Operation of the new bridge and roadway approaches would have no impact on anadromous fish or EFH, because operation would be consistent with existing conditions.

Northern Spotted Owl and Marbled Murrelet

During construction, pile-driving and bridge demolition activities would be the greatest sources of project noise. Noises generated from these high-level noise activities would likely exceed the sound level of vehicular and truck traffic already using the bridge site during daylight hours. It is anticipated that the action-generated sound levels would be above the ambient sounds (i.e., Ambient=High, Action-Generated=Very High or Extreme). Although traffic is heavy during summer/fall months, it is sporadic, with sound levels falling to near “natural” ambient levels intermittently. During construction, action-generated sound levels would be near-constant at times, thus there is the potential for disturbances from noise to rise to the level of harassment in and near the project area. It is estimated that approximately 35.5 acres adjacent to the BSA would be subject to harassment from auditory disturbance. Because the project would be constructed in an area where noise levels are already well above natural ambient levels and would not appreciably change the effects of the surrounding vegetation and upland areas (no removal of mature trees), the duration and significance of noise impacts will be minimal.

Large potential nest trees do not occur near the BSA, so adverse impacts from visual harassment are not anticipated. The project site does not contain densely vegetated areas with mature trees that would be considered potential habitat for northern spotted owl or marbled murrelet. The BSA comprises a wide river channel that is sparsely vegetated with grasses, shrubs, mainly non-coniferous trees (such as oak, tan oak, alder, bay, willow), and several larger Douglas-firs on the outskirts. Human presence is well established along the roadway, bridge, and river bars. Construction of any of the build alternatives would not substantially alter that effect. The topographic features around the BSA are not likely to buffer project-generated sound, because the project would occur within a river channel and associated valley.

The study conducted by LWA (2013) determined that construction disturbance during the breeding season would not result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. This is due to the lack of suitable habitat within a 0.7-mile radius and no recent detections or observations for both bird species within a 5-mile radius. The recommended buffer needed to attenuate very high to extreme equipment noises down to existing pre-project sound levels is attainable.

It is highly unlikely that northern spotted owl or marbled murrelet would nest or use any foraging habitat within or adjacent to the BSA. Existing research and survey data (LWA 2013; CDFW 2020) show that detections and observations for both bird species historically occurred roughly outside a 2-mile radius of the project footprint. As previously mentioned, this survey data dates back almost 30 years for marbled murrelet and 10–20 years for northern spotted owl. Critical habitat lies beyond the 2-mile radius. On-site surveys conducted by LWA showed that there is a

significant lack of suitable habitat for northern spotted owl and marbled murrelet within a 0.7-mile radius of the BSA. It has therefore been concluded that project construction would not have a direct effect on northern spotted owl or marbled murrelet. Similarly, project construction would have no effect on designated critical habitat for northern spotted owl or marbled murrelet.

Indirect effects under the FESA are those that are caused by or will result from the proposed action and occur later in time (USFWS and NMFS 1998). Each of the build alternatives would be a short-term construction activity that would be completed within two construction seasons. The project would not significantly alter habitat suitability for northern spotted owl or marbled murrelet from existing conditions, and thus would have no indirect effects on these species or their habitats.

Mitigation measure MM TES-1 (Northern Spotted Owl and Marbled Murrelet), described below, will be used to minimize project-related construction impacts on owls and murrelets.

Operation of the new bridge and roadway approaches would have no impact on northern spotted owl or marbled murrelet, because operation would be consistent with existing conditions.

Northern Red-Legged Frog, Foothill Yellow-Legged Frog, and Western Pond Turtle

Project construction could impact frogs and turtles in the following ways:

- Construction-related impacts, especially in-channel work, may result in adverse impacts via direct take due to operation of equipment in or adjacent to the stream channel when flowing or standing water is present.

- Activities related to project construction would result in some localized vegetation and soil disturbance. Vegetation and soil removal can accelerate erosion processes and increase the potential for sediment to enter the Mattole River. Excessive sedimentation into the stream channel has the potential to reduce habitat quality for northern red-legged frogs and western pond turtle.

- Construction activities typically include construction equipment refueling on location, which may result in minor or major fuel and oil spills. Without rapid containment and clean up, these materials could be potentially toxic depending on the location of the spill in proximity to surface water features.

AMM HYDRO-1 (Erosion and Sedimentation Controls), AMM HYDRO-2 (Prevention of Accidental Spills of Pollutants), AMM NAT-1 (Protection of Riparian Habitat), AMM VIS-2 (Revegetation), and mitigation measure MM BIO-1 (Project Footprint) described below will be used to minimize project-related construction impacts on northern red-legged frog and western pond turtle.

Special-Status and Migratory Birds and Raptors

Construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Loss of fertile eggs or nesting birds, or any activities resulting in nest abandonment, may adversely affect these species. The project may also result in a small, temporary reduction of foraging or roosting habitat for these species. Due to the regional abundance of similar habitats, however, temporary habitat loss is not expected to result in adverse impacts on these species. Mitigation measure MM BIO-2 (Special-Status and Migratory Birds and Raptors) described below will be used to minimize project-related construction impacts on birds.

Pallid Bat

Bat species may roost individually or in small groups in tree cavities, in riparian vegetation, or under the bridge. Due to the ability of individual bats to move away from disturbance, direct impacts on bats are not expected when the bats are not in a maternity colony. Pallid bats may form maternity colonies in crevices under the bridge and large tree cavities in the BSA. If a tree that contains a pallid bat colony is removed, the removal could result in bat mortality or injury. Mortality or injury could also occur if the bridge contains pallid bat or bat maternity colonies when it is removed.

Indirect impacts may occur from construction disturbances if a maternity colony is present in or adjacent to the BSA. Significant noise disturbance could result in adults temporarily or permanently leaving the maternity colony. Mitigation measure MM BIO-3 (Pallid Bat) described below will be used to minimize project-related construction impacts on bats.

Ring-Tailed Cat

Direct impacts on ring-tailed cat could result from tree and other vegetation removal if these activities took place during the natal and maternal denning period (May 1–June 30). Ring-tailed cat could perish if the tree is removed while occupied by the animal.

Because ring-tailed cats commonly use multiple dens when raising their kits and move kits when disturbed, females using dens outside the vegetation removal area would likely move kits to an alternative den if disturbed by noise during construction. Indirect impacts from construction noise are not anticipated. Mitigation measure MM BIO-4 (Ring-tailed Cat and Sonoma Red Tree Vole) described below will be used to minimize project-related construction impacts on ring-tailed cat.

Sonoma Red Tree Vole

No impacts on Sonoma red tree vole are anticipated to result from project construction. Large trees in montane hardwood-conifer habitat that may provide suitable habitat for this species will be removed from the BSA. Mitigation measure MM BIO-4 (Ring-Tailed Cat and Sonoma Red Tree Vole) described below will be used to minimize project-related construction impacts on Sonoma Red Tree Vole.

Operation of the new bridge and roadway approaches would have no impact on special-status animal species because the new bridge and roadway improvements would follow the existing alignments.

b) Less-than-Significant Impact. Project construction would have minor temporary and permanent impacts on vegetation communities and habitats in the BSA. Of the various vegetation community types present in the BSA, riparian habitat (montane riparian) is considered a sensitive natural community by USACE, CDFW, and the County. Approximately 0.37 acre of montane riparian habitat would be temporarily affected by project construction as a result of the temporary detour route, construction access, construction staging, and equipment operation in the floodplain. AMM NAT-1, described below, will be used to protect riparian habitat.

c) Less-than-Significant Impact with Mitigation Incorporated. Project construction would result in approximately 2.516 acres (1,634 linear feet) of temporary impacts and 0.062 acre (35 linear feet) of permanent loss of wetlands and other waters (Figure 2-11). Temporary construction impacts on 0.175 acre of riparian wetlands and 2.341 acre (1,634 linear feet) of perennial stream (i.e., Mattole River) would be due to project construction access, creation of a temporary detour and bridge, and the placement of work pads in the river channel. Permanent impacts would result from the placement of permanent fill for the new center bridge pier and the southern abutment into the Mattole River channel, below the OHWM. The existing bridge footings and concrete abutments would be removed. Areas temporarily disturbed by project construction would be restored to pre-project conditions. The project would have no operational impacts on wetlands or other waters. The existing bridge would be replaced on the same alignment with a new structure and would operate in the same regard. Mitigation measures MM WET-1 through -3, and mitigation measure MM WET-1 described below will be used to reduce potentially significant impacts on wetlands to less-than-significant levels.

d) Less-than-Significant Impact. Project construction could temporarily inhibit the movement of wildlife throughout the BSA, particularly along the river corridor and adjacent montane riparian habitats. Areas of temporary impact could result in habitat fragmentation during construction activities through exclusion and disturbance of this habitat. The project would not, however, create any permanent barriers to wildlife passage or habitat.

e) Less-than-Significant Impact. The project will comply with the goals and objectives described in Humboldt County's General Plan (Humboldt County 2017), including measures for water quality and biological resources protection. The project will also comply with Humboldt County's riparian vegetation provisions specified in the General Plan, which include adhering to Humboldt County's grading ordinance and protecting and retaining natural vegetation to the extent possible.

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

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

The following conservation measures and BMPs will be included as part of the project to reduce impacts:

Avoidance and Minimization Measures

Plants

Although implementation of the project is not anticipated to affect any special-status plant species, AMM VIS-1 and AMM VIS-2 described in Section 2.1.7, and AMM NAT-1 Protection of Riparian Habitat, described below will be used to minimize project-related impacts on vegetation.

Natural Communities

The following AMM will be used during construction to reduce impacts on the natural communities found in the BSA:

- **AMM NAT-1: Protection of Riparian Habitat.** The project was designed and will be constructed to avoid and minimize the removal of riparian vegetation to the maximum extent practicable. Staging areas and construction access routes shall avoid encroachment into riparian vegetation where practicable and minimize encroachment where complete avoidance is not practicable. “Avoided” riparian habitat shall be clearly identified in the construction drawings and contractor work plans. Exclusionary fencing shall be installed to mark boundaries of all avoided riparian areas adjacent to the work area. All pedestrian and vehicular traffic into the avoided areas shall be prohibited during construction. The exclusionary fencing shall be inspected and maintained on a regular basis throughout project construction.

Mitigation Measures

Animals

In addition to use of AMM HYDRO-1 and AMM HYDRO-2 described in Section 2.2.1, Hydrology and Floodplain; AMMs, and AMM NAT-1 described in Section 2.3.1, Natural Communities, the following mitigation measure will also be used to reduce the significance of project impacts on waters of the United States, including wetlands, in the BSA:

- **MM TES-1: Northern Spotted Owl and Marbled Murrelet.** Ambient sound level often has a substantial time-of-day component, with nighttime, dawn, and dusk ambient sound levels generally 5–10 dB lower than typical midday levels (see Appendix A in Environmental Protection Agency 1974). Marbled murrelet flights into nests to feed nestlings and for nest-tending exchanges are concentrated around dawn and dusk (Nelson and Hamer 1995), during the period when ambient noise levels tend to be lower than average daytime levels (USEPA 1974). Specifically, for marbled murrelet, the harassment threshold distances provided in Table 1 of the guidance document apply to

noise-generating activities occurring during the midday period, when the risk of harassment is lower. The following measure is recommended to avoid the potential for adverse effects on marbled murrelet in or near the vicinity of the BSA:

- All work that produces noise that is greater than the existing ambient pre-project sound level (High, 81–90 dB) will be conducted during weekdays, during daylight hours beginning 2 hours after sunrise and ending 2 hours before sunset.

- **MM TES-2: Anadromous Fishes and Essential Fish Habitat.** In addition to AMM HYDRO-1 (Erosion and Sedimentation Controls), AMM HYDRO-2 (Prevention of Accidental Spills of Pollutants), AMM NAT-1 (Protection of Riparian Habitat), AMM VIS-2 (Revegetation), and AMM BIO-1 (Project Footprint), the following measures will be used to further avoid or minimize project-related impacts on anadromous fish:

  - The County shall adhere to a limited operating period during the low-flow season between June 15 and October 15, with case-by-case extensions to be reviewed and approved by NMFS and CDFW, for all wetted channel construction work and any isolating and dewatering of portions of the stream channel.

  - The County shall implement erosion control measures, including a storm water pollution prevention plan, consistent with provisions of Caltrans Standard Specifications Section 20-2 and 20-3.

  - The County shall use clean gravels (meeting Caltrans' Standard Specifications) of a size suitable for spawning salmon to create all vehicle access paths and work pads within the OHWM of the stream channel with minimal channel disturbance.

  - The County shall install fill in the wetted stream channel only within areas enclosed, using sheet pile (vibrated in) retaining systems, sandbags, portable concrete barriers, or similar approved methods to retain gravel and sediment, and turbidity controls to prevent exceedance of water quality objectives.

  - Fill containment enclosures will be installed using fish removal, relocation and exclusion methods performed by qualified biologists before placing fill. Fish removal and exclusion plans will be provided by the County for CDFW approval before beginning construction.

  - The County shall remove any crushed rock used to surface access paths and work pads but leave the clean spawning-sized gravels in the channel graded to conform to the natural streambed contours at the end of in-water construction.

  - The County shall ensure that all fuel storage and refueling sites, concrete washouts, and any other hazardous materials are stored on the top of the bank at least 50 feet from surface water.

- The County shall minimize disturbance of riparian vegetation and replant any riparian areas that must be cleared or otherwise disturbed according to the project's Mitigation and Monitoring Plan.

- The County shall ensure that all construction equipment, pumps, hand tools, and personnel protective equipment that is to be used in the stream channel is subjected to inspection and appropriate treatments to prevent the spread of invasive plant and aquatic invertebrate species.

- The County shall conduct post-construction mitigation monitoring and reporting according to the mitigation provisions described in the CEQA EIR adopted by the County.

- Annual monitoring and reporting of performance of riparian wetland mitigation will be conducted for a minimum period of 3 years following construction, in accordance with the USACE regulatory program for the issuance of Department of the Army permits under Section 404 of the CWA, and the SWQCB requirements under Section 401 Water Quality Certification permitting program. All applicable regulatory agencies will be provided copies of these monitoring reports.

In addition to using AMM HYDRO-1 and AMM HYDRO-2 described in Section 2.2.1, Hydrology and Floodplain; AMM NAT-1 described in Section 2.3.1, Natural Communities; and AMM VIS-2 described in Section 2.1.7, Visual Resources/Aesthetic, the following mitigation measures will be used:

- **MM BIO-1: Project Footprint.** The project site footprint will be restricted to the minimum area necessary to complete the project.

- **MM BIO-2: Special-Status and Migratory Birds and Raptors.** The following measures will be used to avoid or minimize project-related impacts on special-status birds in or near the vicinity of the BSA:

  - If all necessary approvals have been obtained, potential nesting substrate (e.g., trees and shrubs) that will be cut down to accommodate construction should be felled and removed before the onset of the nesting season (February 15 through August 31), if practicable. This will help preclude nesting and substantially decrease the likelihood of direct impacts.

  - No more than 15 days before construction during the nesting bird season, a pre-construction survey for nesting white-tailed kite, northern goshawk, golden eagle, long-eared owl, Vaux's swift, olive-sided flycatcher, purple martin, yellow warbler, and yellow-breasted chat shall be conducted by a qualified biologist within the BSA and a 250-foot buffer around the BSA. During this survey, the biologist shall inspect all trees, shrubs, and other potential habitat for nests. If an active nest is found within 250 feet of the construction area, appropriate conservation

measures (as determined by a qualified biologist) shall be implemented. These measures may include but are not limited to establishing a construction-free buffer zone around the active nest site, biological monitoring of the active nest site, and delaying construction activities in the vicinity of the active nest site until the young have fledged. The County will inform Caltrans if such an activity occurs.

- **MM BIO-3: Pallid Bat.** The following measures will be used to avoid or minimize project-related impacts on pallid bats:

  - To the extent practicable, removal of large trees with cavities and removal of the existing bridge shall occur before maternity colonies form (i.e., before March 1) or after young are volant (i.e., after August 15). The removal of the existing bridge during this time period may not be feasible, because the existing bridge must be removed during the in-water construction period (June 15 through October 15).

  - Exclusionary devices may be placed over potential bat habitat on the existing bridge between August 15 and March 1 during the year before construction to prevent bats from forming maternity colonies.

  - If construction (including the removal of large trees and the existing bridge) occurs during the non-volant season (March 1 through August 15), a qualified biologist shall conduct a pre-construction survey of the BSA to locate maternity colonies. The pre-construction survey will be performed no more than 14 days before the implementation of construction activities (including staging and equipment access). If a lapse in construction activities for 14 days or longer occurs between those dates, another pre-construction survey will be performed. If a maternity colony is present, bridge or tree removal shall not occur until it is determined that the young are volant.

- **MM BIO-4: Ring-Tailed Cat and Sonoma Red Tree Vole.** The following measures will be used to avoid or minimize project-related impacts on ring-tailed cats and Sonoma Red Tree Vole:

  - Tree removal will be minimized, and large snags and old growth trees will be avoided, to the extent feasible.

  - Remove all trees during the non-denning period (July 1–April 30). Trees may be removed during the denning season for ring-tailed cat (May 1–June 30) if surveys during the denning season reveal no potential natal or denning/nesting trees within the removal area.

  - If vegetation removal is to occur during the denning season (May 1-June 30), a qualified biologist will survey for potential natal or maternity den trees using protocol search techniques within areas slated for vegetation removal and within 375 feet of the vegetation removal area. The survey will be performed no more

than 2 weeks before the implementation of vegetation removal. During the denning period, trees that have maternal den characteristics shall be retained until the day after all other trees within a 375-foot radius have been felled.

- If no potential denning trees are observed within 375 feet of vegetation removal, these restrictions would not be necessary.

Wetlands

In addition to use of AMM HYDRO-1 and AMM HYDRO-2 described in Section 2.2.1, Hydrology and Floodplain; AMMs AIR-1 through -6 described in Section 2.2.6, Air Quality; and AMM NAT-1 described in Section 2.3.1, Natural Communities, the following mitigation measure will also be used to reduce the significance of project impacts on waters of the United States, including wetlands, in the BSA:

- **MM WET-1:** Before any discharge of dredged or fill material into waters of the United States, including wetlands, authorization under a Nationwide Permit shall be obtained from USACE. For any features determined not to be subject to USACE jurisdiction during the verification process, authorization to discharge shall be obtained from the Regional Board. For fill requiring a USACE permit, water quality certification shall be obtained from the Regional Board before discharge of dredged or fill material.

- **MM WET-2:** Before any activities that would obstruct the flow of, or alter the bed, channel, or bank of any intermittent or ephemeral creeks, notification of streambed alteration shall be submitted to the CDFW and, if required, a streambed alteration agreement shall be obtained from CDFW.

- **MM WET-3:** Any monitoring, maintenance, and reporting required by the regulatory agencies (i.e., USACE, Regional Board, and CDFW) shall be implemented and completed. All measures contained in the permits or associated with agency approvals shall be implemented.

- **MM WET-4:** Impacts on riparian wetlands will be mitigated onsite. For the purposes of this mitigation, riparian habitat is synonymous with riparian wetlands. Wetlands mitigation planting will occur on the banks of the Mattole River after the northern work pad and the temporary detour road have been removed. The plantings will be done in kind and at a 3:1 ratio.

3.2.5. CULTURAL RESOURCES

Would the project:	Significant and Unavoidable Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	X			
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?				X
c) Disturb any human remains, including those interred outside of dedicated cemeteries?				X

CEQA SIGNIFICANCE DETERMINATIONS FOR CULTURAL RESOURCES

a) Significant and Unavoidable Impact. The Honeydew Bridge is a significant historical resource, eligible for listing in the NRHP under Criterion C. Its removal will be done so in consultation between Caltrans and SHPO, and in accordance with the Section 106 PA. The existing bridge is near the end of its service life and is considered structurally deficient. It does not comply with modern geometric and seismic standards. Rehabilitation of the existing bridge to meet modern geometric and seismic standards would be both technically infeasible and cost prohibitive. Topography, development, and other factors limit the options for alignment of a replacement bridge; therefore, the existing alignment, which would require removal of the existing bridge, is the most practicable alignment. Pursuant to §15064.5, the impact would be significant and unavoidable. Surveys, records searches, and reviews of historical collections, did not result in the identification of any other known historical resources would be affected by project implementation.

b, c) No Impact. The project's ASR (Roscoe and Associates 2013) assessed potential impacts of the project on archaeological or other cultural resources within a 0.5-mile radius of the project area. Pre-field background research was used to identify prehistoric uses of the survey area and to generate specific geographic information about archaeological resources in the vicinity. It also provided an understanding of the types of cultural resources that were likely to be encountered in the project APE. This research included an examination of historical maps, records, and published and unpublished ethnographic documents at the Humboldt County Historical Society and Humboldt State University Library, as well as the personal libraries of the ASR's author. A records search (IC file #12-1608) at the Northwest Information Center in Rohnert Park, California was conducted to determine whether previous cultural resources surveys were performed for, or recorded cultural resources are situated in the APE. Tribal outreach was conducted using the contact list provided by the NAHC. The NAHC has responded that the search of its Sacred Lands file did not indicate the presence of Native American cultural resources in the vicinity of the project area. Also included in the NAHC response was a list of Native American contacts that may have knowledge of cultural resources in the project area. The project's archaeologist sent letters to all persons identified by the NAHC requesting

information and help in identifying and protecting cultural resources that could be affected by the project. Follow up phone calls were also used as part of the outreach effort.

Erika Collins, THPO for the Bear River Band of the Rohnerville Rancheria requested to accompany the field crew to the project area.

In addition to records pertaining to the historical significance of the Honeydew Bridge (as described previously in the discussion of built/architectural resources), the background research revealed the reported locations of two indigenous upper Mattole village sites several hundred meters upstream and downstream of the project's APE. A pedestrian field survey of the APE was completed by cultural staff, with Ms. Collins also present, during the field survey on June 27, 2013 (Roscoe and Associates 2013). Neither of the village sites mentioned in the background research were relocated. Information shared by longtime residents of Honeydew indicated that one of these village locations was eroded away during the 1955 flood and again during the 1964 flood (Roscoe and Associates 2013). What remains today is a scoured gravel bar supporting recent growth of riparian vegetation.

No archaeological resources were identified in the APE. Pursuant to Section 15064.5, the project would have no impact on archaeological resources. If previously unknown resources are inadvertently encountered during project construction, AMM CUL-1 and AMM CUL-2 described below will be used to avoid impacts on cultural resources and human remains.

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

Avoidance and Minimization Measures

It is Caltrans' policy to avoid cultural resources whenever possible. Further investigations may be needed if archaeological sites, features, or other phenomena are discovered and cannot be avoided by the project. If buried cultural materials are encountered during construction, it is Caltrans' policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Additional survey will be required if the project changes to include areas not previously surveyed.

The following measures will be used to ensure that potential project impacts on significant cultural resources are avoided or reduced to less-than-significant levels:

- **AMM CUL-1: Inadvertent Discovery of Cultural Resources.** If cultural resources, such as chipped or ground stone, historic debris, building foundations, or bone are discovered during ground-disturbance activities, work will be stopped within 20 meters (66 feet) of the discovery, per the requirements of CEQA (Title 14 CCR 15064.5 (f)) and Section 106 (36 CFR 800.13). Work near the archaeological finds will not resume until a professional archaeologist, who meets the Secretary of the Interior's Standards and Guidelines, has evaluated the materials and offered recommendations for further action.

- **AMM CUL-2: Inadvertent Discovery of Human Remains.** If human remains are discovered during project construction, work will stop at the discovery location, within 20 meters (66 feet), and any nearby area reasonably suspected to overlie adjacent to

human remains (Health and Safety Code, Section 7050.5). The Humboldt County coroner will be contacted to determine whether the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (PRC, Section 5097). The coroner will contact the NAHC. The descendants or most likely descendants of the deceased will be contacted, and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in PRC, Section 5097.98. Work may resume if NAHC is unable to identify a descendant or the descendant failed to make a recommendation.

Mitigation Measures

No project-specific mitigation is required for this environmental resource issue.

3.2.6. ENERGY

Would the project:	Significant and Unavoidable Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?				**X**
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				**X**

CEQA SIGNIFICANCE DETERMINATIONS FOR ENERGY

No Impact. Construction of the project would require the use of diesel- and gasoline-powered equipment. This would not be considered a wasteful, inefficient, or unnecessary use of energy resources. Operation of the project would not involve the use of any energy resources. The project would not conflict with any state or local renewable energy or energy efficiency plan.

3.2.7. GEOLOGY AND SOILS

Would the project:	Significant and Unavoidable Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			X	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	

CEQA SIGNIFICANCE DETERMINATIONS FOR GEOLOGY AND SOILS

a(i). No Impact. There are no earthquake faults in the project area (Taber Consultants 2012). Therefore, there is no potential for surface fault rupture in the project area.

a(ii). Less-than-Significant Impact. The nearest fault zones are the Whale Gulch fault, known to have late Quaternary activity, and the King Range Thrust Zone, which has undifferentiated Quaternary activity. Both of these faults are shown to be overlapping roughly parallel at a distance of approximately 2 miles to the southwest of the project site (Taber Consultants 2012). The San Andreas Fault (Shelter Cove) is approximately 8 miles to the south and is known to have ruptured in 1906 (Taber Consultants 2012).

Caltrans online acceleration response spectra tool (2017b) shows the Honeydew-Whale Gulch-Bear Harbor fault zone approximately 2.2 miles to the southwest with a maximum magnitude of 6.7. Other active or potentially active faults are farther away from the project site including the Petrolia Thrust Fault to the northwest and the Briceland Fault to the northeast. Other faults are mapped in the local area but are not shown as potentially active; the closest is the Mattole Fault Shear Zone, which is shown approximately 1 mile southeast of the project site (Taber Consultants 2012). No faults are shown crossing in or near the project site and the site is not within an Alquist Priolo Fault Hazard Zone. The presence of these regional faults, some of which are known to be active, suggests a potential for strong ground shaking in the project area in the event of an earthquake. However, the build alternatives would be constructed according to current design standards and would be able to withstand typical bedrock accelerations and site-specific geologic conditions. Construction would not result in impacts on the existing risk of seismic activity in the project area, or impacts related to the exposure of the public to existing geology. The risk of loss, injury, or death involving seismic ground shaking would be less than significant.

a(iii). Less-than-Significant Impact. The potential for liquefaction to occur in soils mapped within the project area is generally low; however, based on the plasticity index for soils (i.e., Crazycoyote-Windynip-Caperidge complex) associated with the Mattole Road corridor on the north side of the river up to and including the northern bridge approach and hillsides to its east, the liquefaction potential is moderate to moderately high due mainly to a slow rate of water transmission (NRCS 2019).

Any of the build alternatives will be constructed according to current design standards and would be able to withstand typical site-specific geologic and soil conditions. The risk of loss, injury, or death involving liquefaction would be less than significant using modern design standards.

a(iv). Less-than-Significant Impact. The Honeydew area is mapped as being susceptible to deep landslides on the north side of the Mattole River due to weak rocks and/or steep slopes but has no susceptibility on the south side of the river; however, there are no recorded occurrences of active or historic landslides in the project area or immediate vicinity (California Department of Conservation 2019). As previously described, the project area is within the Mattole Valley. Outside of the Mattole River channel, the surrounding landform is gently rolling on the southern side of the Mattole River channel, ascending steeply northeast of the Mattole Road northern bridge approach (California Department of Conservation 2019). The potential for slope instability to result in landslides specifically within the project area is low due to the proximity of the project to known susceptible areas and topography but increases outside of the project area to the north. The risk of loss, injury, or death involving landslides would be less than significant.

b) Less-than-Significant Impact. The erosion potential for soils in the project area range from very low to moderate. In the project area, the more moderate ratings occur in soils south of the Mattole River channel. Potential temporary impacts on the geological environment could occur as a result of cut and fill operations required to create the new roadway bridge approaches. The clearing of vegetation, placement of fill, and ground-disturbing excavation and grading activities

would alter the existing environmental conditions, thus increasing the risk of erosion on exposed steep slopes and other disturbed areas. However, use of erosion control measures as required by Caltrans and adherence to all requirements set forth in the NPDES permit required for construction actions would address any potential construction-related erosion and siltation impacts.

The project will be conducted in accordance with all federal, state, and local regulatory requirements described in Section 2.2.3 of the DEIR/EA. In addition, AMM HYDRO-1 described in the Hydrology and Water Quality section below, will be incorporated into the project to reduce the potential for soil erosion during construction.

c) Less-than-Significant Impact. Four soil map units occur in the project area (NRCS 2019). These map units are summarized in Table 3-1 and shown in Figure 2-6. Soil physical properties are described in detail in the *Preliminary Geotechnical Reconnaissance Report* (Taber Consultants 2012).

Table 3-1. Soil Map Units in the Project Area

Map Unit Name Taxonomy	Map Unit Reference Code	Drainage Class	Depth to Restrictive Layer	Hydric Soils
Water and Fluvents, 0% to 2% slopes	100	Somewhat excessively drained	More than 80 inches	Yes
Parkland-Garberville complex, 2% to 9% slopes	151	Moderate to well-drained	More than 80 inches	No
Conklin, 0% to 2% slopes	153	Well-drained	More than 80 inches	No
Crazycoyote-Windynip-Caperidge complex, 15% to 50% slopes	569	Well-drained	More than 80 inches	No

Soils in the project area have a generally low to moderate potential for liquefaction and landslide. The potential for liquefaction to occur in soils mapped within the project area is generally low; however, based on the plasticity index for soils (i.e., Crazycoyote-Windynip-Caperidge complex) associated with the Mattole Road corridor on the north side of the river up to and including the northern bridge approach and hillsides to its east, the liquefaction potential is moderate to moderately high due mainly to a slow rate of water transmission (NRCS 2019).

Landslide potential is mapped on the north side of the Mattole River due to weak rocks and/or steep slopes but has no susceptibility on the south side of the river; however, there are no recorded occurrences of active or historic landslides in the project area or immediate vicinity (California Department of Conservation 2019).

There is no potential for subsidence to occur in soils found in the project area (NRCS 2019). The project area is not susceptible to settlement and subsidence.

Construction requirements for the build alternatives will consider the following:

- The site is considered adequately stable and foundation support is available by means of foundations penetrating into the highly weathered rock and compact older alluvium underlying the site. Shallow foundations, including spread footings are considered unsuitable for the pier foundations and are likely unsuitable for the abutment locations due to the thicknesses of soft and loose soil. These soft and loose soils are possibly liquefiable and subject to settlement. These materials are also not considered scour resistant.

- Driven steel piles are likely the preferred foundation type; however, the presence of cobbles would likely require the use of driving shoes and/or cleanout drilling during driving. Cast in drilled hole (CIDH) piling would be a suitable alternative; however, drilling would be difficult due to likely caving conditions and may require extensive casing. At a minimum, Caltrans standard 24-inch or larger CIDH piles with wet specifications would be needed.

- Driven concrete piles are considered unsuitable due to presence of cobbles and possibly larger clasts. The length of required piles would also present considerable transportation issues.

- It is expected that seepage during dry season construction above the channel elevation would be minor and controllable by pumping. This area receives considerable rainfall during the rainy season and construction during wetter periods of the year would likely encounter significant seepage issues.

Any of the build alternatives will be constructed according to current design standards and would be able to withstand typical site-specific geologic and soil conditions. The potential for project-related impacts related to the physical properties of soils in the project area would be less than significant.

d) Less-than-Significant Impact. Expansive soils are soils that contain water-absorbing minerals, mainly “active” clays (e.g., montmorillonite). Such soils may expand by 10 percent or more when wetted. The cycle of shrinking and expanding exerts continual pressure on structures, and over time can reduce structural integrity. Soil susceptibility to expansion (i.e., shrinking and swelling) is tested using Uniform Building Code Test Standard 18-1. If the linear extensibility is more than 3 percent, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

As shown in the physical soil properties table provided in Appendix D of the *Preliminary Geotechnical Reconnaissance Report* (Taber Consultants 2012), the linear extensibility of soils in the project area ranges from low to moderate. In the project area, the moderate ratings (>3 percent) occur in soils south of the Mattole River channel. The risk of direct or indirect risks to lives or properties associated with expansive soils would be less than significant using modern design standards.

e) No Impact. The project does not involve sewers or wastewater facilities.

f) Less-than-Significant Impact. Although paleontological sensitivity potential is low in the project area, and there are no known, recorded paleontological resources in the project area (Paleobiology Database 2018), ground-disturbing construction activities might result in the disturbance or loss of paleontological resources. Project-related excavations would be between 4 and 12 feet deep for abutments and center pier and approximately 30 feet deep for driven H-piles. These relatively shallow excavations for the abutments and center pier would be within the more recent Quaternary age alluvial deposits, which have low sensitivity for paleontological resources. Deeper excavations needed to install H-piles could reach the Cretaceous-age marine deposits below the more recent Quaternary age deposits, but the absence of known, recorded paleontological resources and the limited area that would be affected make potential construction impacts reduces the potential for construction-related impacts on paleontological resources. It is anticipated that the project would have no construction-related impacts on paleontological resources. However, AMM PALEO-1 described below will be used to protect paleontological resources in the event of inadvertent discovery.

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

Avoidance and Minimization Measures

The project will be conducted in accordance with all federal, state, and local regulatory requirements previously described. In addition, the following AMM will be incorporated into the project to minimize potential effects on paleontological resources:

- **AMM PALEO-1:** Caltrans Standard Specification 14-7.03 requires that if unanticipated paleontological resources are discovered, work shall halt within 60 feet of the discovery and the engineer shall be notified. Compliance with this measure shall ensure that potential unknown paleontological resources are properly handled and secured if discovered.

Mitigation Measures

No project-specific mitigation is required for this environmental resource issue.

3.2.8. GREENHOUSE GAS EMISSIONS

Would the project:	Significant and Unavoidable Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

CEQA SIGNIFICANCE DETERMINATIONS FOR GREENHOUSE GAS EMISSIONS

a, b) Less-than-Significant Impact. An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its incremental change in emissions when combined with the contributions of all other sources of GHG.

Construction GHG emissions would result from material processing, on-site construction equipment, and traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

The project would take two summer seasons to construct and result in temporary construction emissions from worker vehicles, machines, and equipment. However, these emissions would be short-term and would not result in long-term adverse effects. In addition, the project would comply with Caltrans Standard Specifications and all ARB and Air District rules, ordinances, and regulations. This would further reduce GHG emissions production during construction.

The project is needed to improve safety and meet modern standards. The new bridge would reduce waiting times by adding a second travel lane and would allow heavy equipment and large loads to cross. The project would not increase capacity or induce growth; therefore, there would be no operational GHG emissions resulting from the project.

During construction small amount of GHG emissions would be produced; however, the project would not result in operational GHG emissions. The current regulatory or scientific information related to GHG emissions and CEQA significance would only lead to a speculative climate change determination of CEQA significance this project. AMM GHG-1 described below will be used to reduce GHG emissions and potential climate change impact generated by project implementation.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES

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

- **AMM GHG-1.**
    - The project shall comply with Caltrans Standard Specifications Section 14-8 regarding air quality.

- In accordance with Caltrans Standard Specifications, the contractor shall comply with all of the Air District rules, ordinances, and regulations regarding air quality restrictions.

- The project shall comply with Title 13 CCR 2485 which restricts construction vehicles idling to no longer than 5 consecutive minutes.

Mitigation Measures

No project-specific mitigation is required for this environmental resource issue.

3.2.9. HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Significant and Unavoidable Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		X		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?		X		

CEQA SIGNIFICANCE DETERMINATIONS FOR HAZARDS AND HAZARDOUS MATERIALS

a) Less-than-Significant Impact. Project construction would require use of equipment that use fuels, oils, and other potentially hazardous materials. Accidental leaks and spills could expose workers and the environment to these compounds. Although construction would not generate any hazardous materials, a potential hazard to the public and the environment would be posed by the use of diesel or gasoline powered construction equipment (e.g., trucks, excavators) and lubricants such as oil and hydraulic fluids. The potential for such a hazard would be temporary and mitigable because equipment would be routinely maintained and inspected to avoid leaks and is similar to vehicles operating on nearby roads. AMM HYDRO-2 described in the Hydrology and Water Quality section of this CEQA Initial Study will be used to prevent and contain accidental spills and leaks of pollutants (e.g., fuel, oil, grease) that could result from project construction. In the event of an accidental spill, implementation of this measure will reduce the potential hazard to the public and the environment to a less-than-significant level.

b) Less-than-Significant Impact with Mitigation Incorporated. Construction activities would involve ground disturbance, grading, and subsurface excavation. The deepest excavation activities would occur at the abutments and center pier and range from 4 to 12 feet in depth. Soil testing did not discover concentrations of hazardous compounds (WRECO 2017). According to the WRECO study, soil excavated from the project area within the depth ranges 0 to 6 feet bgs could be reused as inert soil. Depths beyond that range were not assessed. These soils would be stockpiled for waste screening and disposal unit classification during construction and would be subject to CCR Title 23 stockpile screening requirements. MM HAZ-1 - Inadvertent Discovery of Hazardous Materials or Waste described below be used to ensure that workers and the public would not be exposed to inadvertently discovered hazards that could be encountered during project construction.

Construction of the project may involve the handling of potential hazardous waste/materials. Bridge debris, including painted surfaces, asbestos, and treated wood waste will require special handling and disposal. Federal and state requirements for projects involving hazardous waste/materials handling and disposal will be used. Under the project, disposal of bridge debris during demolition at certified landfill(s).

Asbestos

Naturally occurring asbestos (NOA) is found in certain rocks, including serpentine. The most common forms of NOA minerals are chrysotile, actinolite, and tremolite. A review of the *General Location Guide for Ultramafic Rocks in California - Areas Likely to Contain Naturally Occurring Asbestos* (CGS Open-file Report 2000-19, 2000) indicated that NOA was not mapped on, or in the near vicinity, of the project site (WRECO 2017). Laboratory testing confirmed the absence of NOA in the project area.

The bridge’s age makes it susceptible to having asbestos contained in its construction materials. In accordance with the USEPA's National Emission Standard for Hazardous Air Pollutants (NESHAP) regulation, facilities planned for renovation or demolition must be inspected for ACM before the planned renovation or demolition. In March 2021, three bulk

samples were collected under the purview of a California Certified Asbestos Consultant (CAC #05-3872) (WRECO 2021). All samples' results were below detection limits for asbestos. Therefore, the bridge material sampled for this survey is not subject to regulation by the USEPA as ACM or regulated ACM or California's hazardous waste law (Title 22 CCR Chapter 11). The sampled materials are not characterized by Cal/OSHA as ACM or asbestos-containing construction material and are not assigned a Cal/OSHA asbestos work class designation.

MM HAZ-2–Asbestos described below will be used to mitigate project-related impacts associated with ACM to a less-than-significant level.

Lead-Based Paint

The existing bridge truss reinforced concrete pier, two bridge traffic signs, and an abandoned boat in the Mattole River floodplain underneath the bridge were found to contain varying concentrations of LBP. The existing roadway striping was assumed to contain lead at hazardous levels due to its color, age, and industry practice, and will be treated as such for management purposes. The PSI tested samples from paint chips from these areas for concentrations of lead above regulatory thresholds for worker safety or in levels necessary to be specially handled and to require hazard materials disposal protocols.

The green and yellow paint applied to the bridge have been determined to contain LBP at levels far above the regulatory threshold of 0.1 percent concentration. The yellow paint on one of the bridge signs was also found to contain levels of LBP over the regulatory threshold. The white paint on the boat and the other bridge sign were found to contain concentrations of lead below the regulatory thresholds and is not considered to be hazardous.

MM HAZ-3–Lead-based Paint described below will be used to mitigate project-related impacts associated with the handling of LBP to a less-than-significant level.

Aerially Deposited Lead

Lead is known to occur in soils in the project area. Most soil samples taken as part of the ISA (WRECO 2021) did not contain detectable lead concentrations in excess of San Francisco Bay Regional Board ESLs for lead. These screening criteria consider direct exposure to human health and shallow soil exposure to residential, commercial/industrial, and construction workers regardless of land use and soil excavation depth. Of the multiple soil samples collected, two samples—one on each side of the river—were found to contain detectable lead concentrations. A sample from the southern side of the river exceeded residential ESL, while a sample taken from the northern side exceeded all ESLs. Although total lead concentrations detected in the southern and northern sides of the river adjacent to the existing bridge abutments (120 mg/kg and 490 mg/kg, respectively) were below the Total Threshold Limit Concentration level of 1,000 mg/kg for hazardous waste, they were above the soluble threshold limit concentration "rule of thumb" threshold for waste extraction testing of 50 mg/kg (WRECO 2017, 2021). Some of the elevated lead concentrations in soils may be the result of ADL from the historical use of leaded gasoline in vehicles operating on local roads. Human exposure levels and worker safety requirements during project construction are determined by ESLs.

Soil determined to contain lead concentrations exceeding stipulated thresholds must be managed during construction for worker safety. A lead compliance plan will be required for soil disturbance when lead concentrations are non-hazardous (Caltrans Standard Special Provision 7-1.02K(6)(j)(iii)). Aerially deposited lead in soils will also be managed in accordance with Caltrans Standard Special Provision 14-11.08 Regulated Material Containing Aerially Deposited Lead (2018) and Caltrans Standard Special Provision 14-11.09 Minimal Disturbance of Regulated Material Containing Aerially Deposited Lead (2018) (WRECO 2021).

Excavation work may occur near the existing bridge abutments during demolition activities in areas where ADL was found to be above the threshold concentration level to be considered as hazardous waste, implementation of the build alternatives would be a less-than-significant impact with implementation of MM HAZ-1 and MM HAZ-3.

Treated Wood Waste

Treated wood waste comes from old wood that has been treated with chemical preservatives for purposes of protecting the wood against attacks from insects, microorganisms, fungi, and other environmental conditions that can lead to decay of the wood, and the chemical preservative is registered pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. Sec. 136 et seq.). These chemicals help protect wood from insect attack and fungal decay. Arsenic, chromium, copper, creosote, and pentachlorophenol are among the chemicals used to preserve wood and are known to be toxic or carcinogenic. The Honeydew Bridge deck and guard rail were constructed using treated wood (WRECO 2017). Harmful exposure to these chemicals may result from touching, inhaling, or ingesting treated wood waste particulate (e.g., sawdust and smoke). On August 31, 2021, Governor Newsom signed Assembly Bill 332. AB 332 adopts new Alternative Management Standards (AMS) for treated wood waste that are codified in Health and Safety Code section 25230. The AMS are statutes (HSC 25230 – 25230.18) established by AB 332, that allows handling non-RCRA hazardous treated wood waste in accordance with a set of alternative management standards in lieu of the requirements for hazardous waste pursuant to Health and Safety Code, division 20, chapter 6.5, articles 6, 6.5, and 9 and California Code of Regulations, title 22, division 4.5, chapters 12, 13, 14, 15, 16, 18, and 20. In summary, the AMS lessen storage requirements, extend accumulation periods, allow shipments without a hazardous waste manifest and a hazardous waste hauler, and allow disposal at specific non-hazardous waste landfills. The AMS simplify and facilitate the safe and economical disposal of treated wood waste. Although hazardous waste generators are required to properly classify their waste through knowledge or laboratory analysis, generators of treated wood waste can presume their treated wood waste is hazardous waste and avoid expensive laboratory testing. Generators can then manage their waste in accordance with the AMS, including disposal at certain non-hazardous waste landfills. Upon acceptance at these certain landfills, the treated wood waste, at that point, becomes non-hazardous waste pursuant to Health and Safety Code section 25230.16.

MM HAZ-4–Treated Wood Waste described below will be used to mitigate project-related impacts associated with the handling of treated wood debris to a less-than-significant level.

c) No Impact. Honeydew Elementary School is approximately 400 feet south of the project area. Construction-related hazardous material impacts are not expected to affect the Honeydew

Elementary School. Encountering LBP or experiencing an accidental spill would occur within the immediate project area. Volatile organic compounds (VOCs) were tested for and not discovered in the soil at the bridge or Honeydew Country Store. While lead was detected at the bridge, proposed construction activities would not expose the school to potentially hazardous conditions. Measures to avoid and contain spills are included as part of the project and they are not likely to be close enough to adversely affect it. Therefore, no hazardous waste impacts on the Honeydew Elementary School are anticipated using the project build alternatives.

d) No Impact. The project area is not included on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. However, the Honeydew Country Store contained one LUST site that had reported soil contamination (WRECO 2017). Concentrations of BTEX, MTBE, and TPH-g were originally found in the vicinity of the LUST site. Concentrations of these compounds were not detected during the PSI soil testing. Although the LUST site is adjacent to the active construction area, project activities would not encroach into the site. The project design does not include any disturbance on the store's property at the request of the property's owner.

e) No Impact. The project is not near any public or private airstrip.

f) No Impact. The Humboldt County Emergency Operations Plan (Humboldt County Sheriff's Department 2015) does not specify Mattole Road or Wilder Ridge Road as designated evacuation routes; however, local roads such as these are implied routes. Because a local detour would be provided during construction to maintain through traffic, the project would be consistent with the adopted plan.

g) Less-than-Significant Impact with Mitigation Incorporated. The project area is within a rural area along a river corridor and adjacent to forested hillsides. According to the CAL FIRE map of Humboldt County Fire Hazard Severity Zones in State Responsibility Area (CAL FIRE 2021), the immediate project area in along the Mattole River channel is identified as a moderate severity zone surrounded by a high severity zone outside the main river channel. The use of construction equipment in and around vegetated areas increases the potential for wildfires to be ignited. MM HAZ-5 Wildfire Potential described below will be used to reduce the risk of wildfire associated with project construction to a less-than-significant level. Operation of the project would have no effect on wildfire potential.

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

Avoidance and Minimization Measures

Standard AMMs that will be used during project construction have been incorporated into the mitigation measures described below.

Mitigation Measures

In addition to use of AMM HYDRO-2 - Prevention of Accidental Spills of Pollutants, the following mitigation measures will be used to reduce potential project-related impacts related to hazardous materials and waste to no impact or less-than-significant impact levels:

- **MM HAZ-1 - Inadvertent Discovery of Hazardous Materials or Waste:** Even when all appropriate procedures to identify and characterize contamination have been followed, it is still possible to discover previously unknown contamination and hazards during construction activities. Contamination that is unknown until exposure and discovery during construction will require sampling and testing before removal from the site and subsequent disposal. Health and Safety Code 25914.2 specifies that unanticipated hazardous substances (including hazardous waste) and/or asbestos encountered during construction cannot legally be tested or managed and removed by the prime contractor who discovered it. Hazardous substances and asbestos can only be managed by the prime contractor if this work was specifically included in the original contract documents. Therefore, a contract change order cannot be used in these situations. Caltrans has an on-call Construction Emergency Response Contract (Department use only) managed by the Division of Environmental Analysis, Hazardous Waste, Air, and Noise Office that can be accessed to have appropriate testing and disposal performed for Department administered projects. Consult the current *Unanticipated Hazardous Waste Decision Tree* (Caltrans 2014) (Figure 2-8 in the DEIR/EA).

- **MM HAZ-2 - Asbestos:** The PSI determined that all suspected ACM did not contain asbestos above the laboratory detection limit. Despite the low levels of asbestos detected in the project area, NESHAP regulations require notification of the demolition to be submitted to the Air District and the USEPA (NESHAP Section 61.145(b)). Notifications must contain certain specified information including but not limited to the scheduled start and completion date of the work, the location of the site, the names of operators or asbestos removal contractors, methods of removal and the amount of asbestos, and whether the operation is a demolition or renovation.

- **MM HAZ-3 - Lead-based Paint:** The following BMPs will be used when project activities involve the handling of LBP:

  - LBP shall be abated before planned construction/demolition by a licensed contractor in accordance with 17 CCR 3500.

  - LBP must be transported under a Uniform Hazardous Waste Manifest (Title 22 CCR, Section 6626.23). It must be disposed of either at a Class I landfill or at other landfills that have specific permits to accept these wastes.

  - Demolition and construction work shall be subject to the applicable work practices for LBP and lead hazards including:
    - California Construction Order 1532.1(a)
    - Lead-in-Construction Standard

  - Title 17, CCR (CCR), Division 1, Chapter 8
  - Work Practices for Lead-Based Paint and Lead Hazards

- If more than 100 square or linear feet of lead-containing materials are disturbed, steps must be taken to prevent worker exposure to lead. The Department of Industrial Relations shall be notified at least 24 hours before beginning work.

- **MM HAZ 4 - Treated Wood Waste:** The County shall include provisions in the construction bid documents to ensure the proper removal and disposal of treated wood waste material found on the existing bridge. The following measure shall be implemented to reduce construction-related environmental impacts that could result from treated wood waste removal:

  - The contractor will remove treated wood waste following the alternative management standards specific under Caltrans Non-Special Stand Provision (NSSP) 14-11.14 for treated wood waste, as well as AB 332 AMS contained in statutes (Health and Safety Code section 25230 – 25230.18) and CCR Title 22, Chapter 34, Sections 67386.1 through 67386.12 (2020) for labeling, accumulation, off-site shipment tracking, notification, treatment, and disposal. All personnel that may come into contact with treated wood waste will receive, at a minimum, training on safe handling, sorting and segregating, storage, labeling (including date), and proper disposal methods.

- **MM HAZ 5 - Wildfire Potential:** The County shall include provisions in the construction bid documents to minimize the potential for ignition of wildfire as a result of project construction. The following measure shall be implemented to reduce construction-related wildfire ignition potential:

  - Per the requirements of PRC 4442, the County shall include a note on all construction plans that internal combustion engines shall be equipped with an operational spark arrester, or the engine must be equipped for the prevention of fire.

3.2.10. HYDROLOGY AND WATER QUALITY

Would the project:	Significant and Unavoidable Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?				X

Would the project:	Significant and Unavoidable Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
(i) result in substantial erosion or siltation on- or off-site;			X	
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;			X	
(iii) create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or			X	
(iv) impede or redirect flood flows?			X	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				X

CEQA SIGNIFICANCE DETERMINATIONS FOR HYDROLOGY AND WATER QUALITY

a) Less-than-Significant Impact. Construction and operation of the project would not violate any water quality standards for surface or groundwater, or WDRs set forth by the North Coast Regional Board's Basin Plan (2018), adopted for management of water quality in the North Coast region. The Mattole River is included on the CWA 303(d) list of impaired waterways due to excessive sediment and high temperatures (North Coast Regional Water Quality Control Board 2018). High winter rainfall on bedrock and other geologic units having low permeability and steep slopes contribute to the very flashy nature of runoff in the Mattole River watershed (North Coast Regional Water Quality Control Board 2018). Extensive road systems and other land uses contribute to this runoff rate that when combined with high winter rainfall and rapid runoff on unstable soils delivers large amounts of sediment to tributaries and the Mattole River. Poor water quality conditions caused by excessive TMDLs have adversely affected anadromous fisheries found in the Mattole River and its tributaries, contributing to sharp declines in these populations and subsequent listing under the FESA. In response, a TMDL management program was established water quality standards for the Mattole River and its tributaries. This program sets maximum levels of pollutants and the "allowable" amount of sediment and temperature in the waterway. In November 2004, the North Coast Regional Board adopted the Mattole River Sediment TMDL. In addition, monitoring programs and an action plan specific to the Mattole River Watershed have been incorporated into the North Coast Regional Board's Basin Plan (2018) to address water quality concerns.

Water pollution control measures have been incorporated into the project design and are required according to Caltrans Standard Specifications (Sections 13 and 21-2) (Caltrans 2018). Additionally, project activities will comply with Humboldt County's Grading Ordinance, and requirements set forth in various environmental permits, including a 401 Water Quality Certification, Construction General Permit, the Statewide Storm Water Management Plan, and the NPDES Program. Implementation of BMPs in accordance with County, Caltrans, and other regulatory permit requirements, and the fact that most project construction activities would occur during the drier summer months would ensure project impacts on water quality are less than significant.

b) No Impact. Construction and operation of the project would have no effect on groundwater supplies. There would be no net change in local aquifers or the local groundwater table as a result of the project.

c (i through iv) Less-than-Significant Impact. Construction activities associated with the project are not anticipated to alter the existing drainage pattern of the site or area in a way that would result in downstream erosion or sedimentation. Work below the Mattole River OHWM would be limited to a strict work window timed to avoid rainfall (typically June through October), thus minimizing or avoiding potential effects on water quality and special-status fish. Temporary work pads and the detour route would be constructed with properly sized "fish rock" for salmon spawning or river-run gravel fill. The gravel used will be washed at least one time with a final cleanliness value of 85 or higher and will be free of oils, clays, debris, and organic material. This river rock will be rounded and uncrushed with no sharp edges. Clean, crushed angular gravel would be placed on top of the fish rock with geotextile fabric because fish rock does not hold together under heavy equipment. Diking/diversion of surface water and sump pumping would be used to dewater the pier location. Temporary water pollution control measures will be used, including but not limited to dikes, basins, and ditches. Embankment material would be required for the approach roadway at the south end of the bridge. This fill would be located in the floodplain, but outside of the ordinary high-water channel of the Mattole River. When the work southern work pad is no longer needed, the diversion would be removed, and the gravel would either be removed as well or spread in the channel.

The project would not substantially reconfigure the existing creek channel or instream drainage patterns of the project area. After old bridge abutment and pier removal, the banks and channel would be contoured to blend in with the surrounding landform. The larger, wider new bridge structure and roadway approaches would increase the amount of impervious surface in the project area. The additional surface area would result in a slight, but less-than-significant increase in storm water runoff and the potential for polluted runoff (e.g., lubricants) but would not necessitate redesigning existing storm water draining facilities or adding drainage facilities for increased storm water capacities.

Construction and operation of the project would involve the use of hazardous materials, such as petroleum-based fuels and lubricants used by motor vehicles, in and adjacent to waterways. Construction activities could also temporarily increase the potential for sediment to enter the river. These project activities could temporarily degrade water quality in Mattole River. Following removal of the barrier, the first storm-generated flush of the season may result in a short-term

rise in turbidity levels. Because most North Coast streams typically deliver high volumes of sediment during elevated flow events, especially first-of-the-season events, it is likely that flushing of sediment associated with the project would occur when local streams are already in a somewhat turbid state. It is anticipated that minor increases in total suspended sediment levels would be generated by the project during first-of-the-season storm events.

No adverse operational impacts on water quality and storm water runoff patterns were identified for the Preferred Alternative. Although the impervious surfaces created by the wider bridge deck and roadway approaches could generate some additional runoff during precipitation events, the effect would be negligible due to the relatively small size of the affected area. Runoff collected from the bridge deck would be directed to the bridge approaches where it would then sheet flow down the side slopes to the river floodplain. The project would not substantially alter the existing drainage pattern of the site or create or contribute to substantial runoff. The impact on drainage and runoff would be less than significant.

The project will be conducted in accordance with all federal, state, and local regulatory requirements described in detail in Sections 2.2.1, Hydrology and Floodplain and 2.2.2, Water Quality and Storm Water Runoff of the DEIR/EA. In addition, AMMs HYDRO-1 and HYDRO-2 described below will be incorporated into the project to minimize potential effects on water quality and ensure project-related impacts would be less than significant.

d) Less-than-Significant Impact. The replacement structure was designed for the HL93, Tandem, and P15 Permit Design vehicle loadings as specified in Caltrans Bridge Design Specifications, Seismic Design Criteria V1.6, and AASHTO 6th Edition. The hydraulic design criteria established in the Caltrans Local Procedures Manual prescribe that the structure be capable of conveying the base or 100-year flood (Q100) and passing the 50-year flood (Q50) without causing objectionable backwater, excessive flow velocities or encroaching on through-traffic lanes. In addition, AASHTO requires at least 3 feet of freeboard (clearance) above the 50-year flood or flood of record. According to the Hydrologic Analysis performed by Pacific Hydrologic (2020), the minimum soffit elevation required to meet these criteria is 335.41 feet msl. There is a high potential for significant volumes of drift (e.g., uprooted trees and other debris) to be carried by the Mattole River during periods of high flow. The proposed bridge was designed to provide more clearance for drift than the minimum recommended.

Diking/diversion of surface water and sump pumping would be used to dewater the pier location. Temporary water pollution control measures will be used, including but not limited to dikes, basins, and ditches. Embankment material would be required for the approach roadway at the south end of the bridge. This fill would be located in the floodplain, but outside of the OHWM channel of the Mattole River.

Work pads would likely require H-piles in the approximate size range of 14x89 feet to be driven roughly 30 feet deep. The clean gravel pads would be placed in the channel margins as necessary and will be removed before the October work deadline.

Temporary work pads and the detour route would be constructed with properly sized “fish rock” for salmon spawning or river-run gravel fill. The gravel used will be washed at least one time with a final cleanliness value of 85 or higher and will be free of oils, clays, debris, and organic

material. This river rock will be rounded and uncrushed with no sharp edges. Clean, crushed angular gravel would be placed on top of the fish rock with geotextile fabric because fish rock does not hold together under heavy equipment.

The exact number, size, types, and depth of piles to be driven are indeterminate because the final design had not been selected to date. However, it is likely that an H-pile, 10x57 feet, would be driven to a depth of 30 feet for the north abutment (Abutment 1). Pier 2 would likely use two 7-foot-diameter CIDH and the south abutment (Abutment 3) would likely use two 48-inch CIDH. In addition, sheet piles may be required for the construction of the pier cap. Construction methods would involve the removal of the existing bridge and pier, and the construction of a new pier and bridge abutments. Construction of the project is expected to take two construction seasons due to the limited in-river work window (June–October). Work in the first season would involve construction of deep foundations for the new pier and installation of the south abutment. Installation of CIDH supports would not require bridge closure. Construction access to the river channel would be made through a private access road near the southwest corner of the existing bridge.

Design of the replacement bridge considered the findings of the project hydraulic study (Pacific Hydrologic 2020) scour analysis. Over the expected life of the proposed bridge, it is reasonable to expect the channel to have deepening or incision to an elevation of 292 feet, a depth of 12 feet below the existing bottom of channel. The maximum potential pier scour over the expected life of the replacement bridge is associated with full development of physical channel degradation. The preferred bridge would not constitute a significant contraction of the flood channel and is not expected to aggravate channel instability (Pacific Hydrologic 2020).

No adverse operational impacts on hydrology or the Mattole River floodplain were identified for the project build alternatives. The replacement bridge would be within a reach of channel that does not have flood risk mapped by FEMA. As such, projects may encroach into the floodplain to the extent they result in a 1.0-foot increase in the water surface elevation of the most probable 100-year flood provided the increase does not result in an increased risk of damage to structures or other negative impacts. Abutments of the preferred bridge will not redirect significant volumes of water from the floodplain to the channel during the most probable 100-year flood. The project hydraulic study (Pacific Hydrologic 2020) determined that the preferred bridge is expected to result in a 0.11-foot increase in water surface elevation during the most probable 100-year flood immediately upstream of the bridge, tapering to a 0.02-foot increase at a location approximately 3,000 feet upstream of the bridge. No structures would be affected by this increase; therefore, the minor increase in water surface elevation during the most probable 100-year flood does not reflect an increase in the risk of damage to structures.

The potential for project construction and operation to adversely affect the Mattole River floodplain would be less than significant.

e) No Impact. Construction and operation of the project would not violate any water quality standards for surface or groundwater, or WDRs set forth by the North Coast Regional Board's Basin Plan (2018) for the North Coast Region.

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

Avoidance and Minimization Measures

The project will be conducted in accordance with all federal, state, and local regulatory requirements previously described. In addition, the following AMMs will be incorporated into the project to minimize potential effects on water quality:

- **AMM HYDRO-1 - Erosion and Sedimentation Control:** Erosion control measures will be implemented during construction of the project in non-riparian upland areas. Erosion control measures to be implemented by the County include the following:

  - Areas where wetland and upland vegetation need to be removed shall be identified in advance of ground disturbance and the "area of disturbance" at each site will be restricted to only those areas necessary to complete each project.

  - To the maximum extent practicable, activities that increase the erosion potential will 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. All bare mineral soil exposed in conjunction with construction, maintenance, or repair, will be treated for erosion before the onset of any rainfall event capable of generating runoff, or at the end of the yearly work period, whichever comes first. Channel access routes and areas designated for equipment staging, maintenance, and fueling will be groomed, bermed, and straw mulched, and seeded as necessary to minimize the potential for the release of fine sediment to the stream or nearby upland areas. Erosion control criteria will consist of at least 2 to 4 inches of straw mulch and 100 pounds per acre native seed when reseeding occurs. No annual vegetation or Italian ryegrass (*Festuca perennis*) will be used.

  - Best management practices (BMPs), such as silt fences, straw wattles, or earthen berms, will be installed between staging areas or temporary material stockpiles and the stream bank to intercept sediment before it reaches the waterway. The BMPs will be installed before 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.

  - If temporary spoil or construction material sites are used, they will be located such that they do not drain directly into the stream, if possible. If a spoils/material site may drain into a surface water feature, catch basins or berms will be constructed to intercept sediment before it reaches the feature. Temporary storage sites will be graded, vegetated, and mulched at end of the project to reduce the potential for erosion.

  - All construction debris associated with the project will be removed from the site and disposed of appropriately.

  - Sediment control measures will be in place before the onset of the rainy season and will be monitored and maintained in good working condition until disturbed areas have been revegetated with native species.

- **AMM HYDRO-2 - Prevention of Accidental Spills:** The release of hydrocarbon contamination (TPH) and other contaminants will be safeguarded against to the greatest extent feasible. If leaks or spills do occur, they will be controlled immediately. All spilled contaminants and contaminated soil will be recovered from the site and stored in Department of Transportation approved containment vessels. All stored contaminated or hazardous material will be removed from the site in a timely manner and disposed of at an approved hazardous waste disposal facility.

  - Equipment parking, maintenance, and fueling will only occur at designated upland staging areas, with all staging locations adequately offset from the active stream channel.

  - All equipment entering the stream channel will be inspected and cleaned at an off-site location before being transported to the work site.

  - Light equipment (e.g., generators, welders, and pumps) as well as heavy equipment (e.g., drill rig) parked within riparian areas will use drip pans or other devices (e.g., absorbent blankets, sheet barriers) as needed to prevent contaminants from reaching the watercourse.

  - Equipment will be inspected for leaks before each shift, throughout the work shift, and at the end of the shift each day.

  - Maintenance involving the removal or repair of hydraulic cylinders or hoses or of reservoirs containing hazardous products will be performed over impervious fabric resistant to TPH.

  - Proper spill kits will be kept on-site through the duration of each project. In the event of a spill, CDFW will be notified and consulted regarding cleanup procedures.

  - All activities related to fueling, lubricating, and maintenance will be performed in the designated staging area unless equipment has been immobilized due to a mechanical failure. In those instances, every effort will be made to safeguard against and control the release of contaminants.

The functional condition of fuel transfer pumps, hose assemblies, and emergency shutoff switches will be evaluated before fueling operations. Personnel tasked with fueling will remain near the fuel pump's emergency shutoff switch during fueling events. Topping-off of fuel tanks will not occur.

Mitigation Measures

No project-specific mitigation is required for this environmental resource issue.

3.2.11. LAND USE AND PLANNING

Would the project:	Significant and Unavoidable Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Physically divide an established community?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				X

CEQA SIGNIFICANCE DETERMINATIONS FOR LAND USE AND PLANNING

No Impact. As the only regional crossing of the Mattole River, Honeydew Bridge is critical to the community of Honeydew, which straddles both sides of the river. Although the project requires temporary closure of the existing bridge during construction, a reasonable, local detour will be created to maintain through traffic. Existing land uses would not be affected by project construction or operation. The project would not physically divide an established community and does not conflict with any applicable land use plan, policy, or regulation. There would no impacts on land use.

3.2.12. MINERAL RESOURCES

Would the project:	Significant and Unavoidable Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

CEQA SIGNIFICANCE DETERMINATIONS FOR MINERAL RESOURCES

No Impact. The build alternatives would not intrude on local or statewide valuable minerals. As stated in Section 2.2.3, Geology, there are no mineral resources that have a significant mining value in the project area.

3.2.13. NOISE

Would the project result in:	Significant and Unavoidable Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
b) Generation of excessive ground-borne vibration or ground-borne noise levels?		X		
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X

CEQA SIGNIFICANCE DETERMINATIONS FOR NOISE

a) Less-than-Significant Impact with Mitigation Included. Noise produced during project construction would be temporary and depend on the type, amount, and duration of equipment being used. Impacts on nearby sensitive receptors would depend on their distance away from the noise-generating sources and whether or not shielding or other noise-reducing materials exist. Construction noise levels would vary on a day-to-day basis and depend on the type of construction being performed during the two summer construction seasons that would be required to complete the project.

Construction activities that would generate noise above existing ambient levels would include clearing, grubbing, demolition and dismantling for the existing bridge structure, excavation, earthwork, pile-driving, concrete work, and paving. The most noise would be generated by certain construction activities such as pile-driving and the movement of heavy trucks in and out of the project area. Sensitive receptors such as nearby residences, the store/post office, and school may experience periodic increases in ambient noise levels, but by limiting these intermittent and temporary construction activities to daylight hours, construction noise may affect, but would not adversely affect the community of Honeydew.

The project is a Type III project. As a result, no noise analysis or consideration of abatement for long-term operations is required under FHWA or Caltrans criteria. Proposed noise level standards outlined in the Humboldt County Noise Ordinance Standards as contained in the current draft of the Humboldt County General Plan Update are shown in Table 3-2.

Table 3-2. Humboldt County Proposed Noise Ordinance Standard

Policy: No Use Shall Create Ambient Noise Levels Exceeding Standards

Land Use Designation	Time Period	Noise Level	
Residential	7 am–10 pm 10 pm–7 am	50 55	70 75
Commercial and Office	7 am–1 pm 10 pm–7 am	65 60	75 70
Industrial	7 am–10 pm 10 pm–7 am	70 65	80 75

The new bridge that would be constructed under any of the build alternatives would open an alternative regional traffic route for all classes of through-truck traffic. Minor increases in episodic traffic noise could result from the anticipated slight increase in large truck and automobile traffic passing through Honeydew. However, other factors outside of the project area such as road accessibility into and out of Honeydew and established regional traffic circulation patterns would continue to moderate traffic-related noise in Honeydew. Post-project, operational ambient noise levels experienced by sensitive receptors in Honeydew are anticipated to remain consistent with existing conditions. However, MM NOI-1, Noise, described below, will be used to reduce potential project-related noise impacts on sensitive receptors. The project is a Type III project as defined by FHWA; no noise analysis was required. Operational-related changes in ambient noise levels in or near the project area would be less-than-significant.

b) Less-than-Significant Impact with Mitigation Included. The new bridge abutments and central pier would be founded on steel H-piles and CIDH piles (see Appendix B for design plan detail). Abutment 1 (north bridge abutment) would consist of a foundation of thirteen 10- by 57-inch steel H-piles driven about 40 feet deep. Pier 2 (the central bridge pier) would be on a foundation consisting of two 84-inch-diameter CIDH piles. Abutment 3 (south bridge abutment) would be built on a foundation consisting of two 60-inch CIDH piles. Installation of temporary sheet piles may be required for shoring the construction areas surrounding the central pier (up to 50 timber or sheet piles) and the Abutment 3 foundations (up to 40 timber or sheet piles). Vibratory pile-driving would likely be used for installing shoring sheet piles surrounding these features. Pile-driving of these girder support piles would take about 2 days and removal at the end of construction will also take 2 days.

Vibratory pile-driving would be used for installing shoring sheet piles. Pile-driving would be accomplished using a crane with a vibratory and an impact hammer to drive pilings into the ground. Vibratory pile-driving would be used where geological conditions allow and would be the only pile-driving method used before July 1, when allowed. It is anticipated that for steel piling an average of 120 strikes per pile would be needed for an impact hammer to drive each pile. It is assumed that an average of six piles per day would be installed.

The seasonal construction period for work within the wetted channel would generally be limited to June 15 through October 15, with pile-driving restricted until after June 30, to the extent practicable. However, the County may request, in consultation with Caltrans, NMFS, and CDFW to extend this in-water work period by a few weeks earlier or later in the season for certain

activities provided that environmental conditions and agency approvals may accommodate such an extension of the in-water work to expedite construction completion schedules.

Construction-related ground vibration resulting from pile-driving would be temporary and localized and would occur only during daylight hours (typically 7:00 am to 7:00 pm, Monday through Saturday). Pile-driving activities would occur in the floodplain and channel. The closest sensitive human receptors would be the Honeydew Community Store and a residence, both near the southern bridge approach and both over 100 feet from the nearest pile-driving location. Pile-driving can create loud percussive sounds and ground-borne vibration within 100 feet of the operation. It is possible that nearby residents and businesses could temporarily experience some ground vibration and be exposed to short-term elevated ambient noise levels as a result of pile-driving. However, it is anticipated that short term elevated noise levels generated by pile-driving and experienced by nearby receptors would be below the maximum 86 dB allowed by Caltrans (Caltrans Specification, Section 14-8.02, Noise Control). Mitigation measure MM NOI-1, Noise, will be used to ensure that noise impacts associated with pile-driving are less than significant.

No blasting activities are proposed for project construction.

c) No Impact. The project location is not in the vicinity of an airport or landing strip.

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

Avoidance and Minimization Measures

Standard AMMs that will be used during project construction have been incorporated into the project construction criteria as previously discussed in this section.

Mitigation Measures

The following mitigation measure will be used to reduce potential project-related impacts related to noise:

- **MM NOI-1 Noise:** The proposed Humboldt County noise ordinance standards described in Table 3-2 will be used during project construction to avoid or minimize the adverse effects on sensitive receptors near the project area.

3.2.14. POPULATION AND HOUSING

Would the project:	Significant and Unavoidable Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

CEQA SIGNIFICANCE DETERMINATIONS FOR POPULATION AND HOUSING

No Impact. The build alternatives would not induce population or employment growth in the project area, given that the proposed bridge would not increase roadway capacity or provide new points of access. Project implementation would not permanently displace existing residents or housing, nor would it necessitate construction of replacement housing elsewhere. The project would have no impact on population or housing.

3.2.15. PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Significant and Unavoidable Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Fire protection?		X		
Police protection?		X		
Schools?			X	
Parks?				X
Other public facilities?				X

CEQA SIGNIFICANCE DETERMINATIONS FOR PUBLIC SERVICES

During construction, a temporary detour bridge would be used downstream from the existing bridge for two summer seasons. The temporary bridge would be capable of carrying 80,000-pound loads (i.e., the weight of a highway legal tractor/trailer combination), which would make it adequate for most emergency vehicles. The temporary detour route would be approximately

0.6-mile long, with emergency vehicles being given priority for passage through the project area. Local police and fire departments would be notified of the detour before construction. Construction would neither inhibit nor reduce utility or emergency service access or response times in the project area and surrounding community with the use of AMM EMER-1, described below.

No utility lines would need to be relocated. The utility poles south of the Wilder Ridge Road and Mattole Road intersection would not be affected. There would be no disruptions and no increased demands in utilities or emergency services. The project would not induce growth or capacity, and therefore would not increase demand for public utilities such as water or emergency services. The new bridge would have no vertical clearance limits and would be capable of conveying large vehicles such as emergency fire vehicles across the river. The presence of the new bridge at this location would greatly enhance the movement of emergency service and large utility vehicles in the region.

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

As with any roadway construction project, it is a possibility that a lane or facility closure during construction could affect emergency service response time. Therefore, the following AMM will be used during construction.

- **AMM EMER-1:** During project construction, Caltrans will coordinate with local emergency service providers to keep them informed of the project construction schedule and any detour routes to avoid or minimize any impacts. Additionally, the project Traffic Management Plan will manage and minimize any circulation impacts during construction.

Mitigation Measures

No project-specific mitigation is required for this environmental resource issue.

3.2.16. RECREATION

	Significant and Unavoidable Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				**X**
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				**X**

CEQA SIGNIFICANCE DETERMINATIONS FOR RECREATION

No Impact. There are no parks or established recreational uses in the project area or surrounding vicinity. Implementation of any of the build alternatives would not inhibit the use of any parks or recreational facilities. Although the immediate project area would be closed to recreation during construction, river access both upstream and downstream of the project would remain open for recreational access.

3.2.17. TRANSPORTATION

Would the project:	Significant and Unavoidable Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X	
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
d) Result in inadequate emergency access?			X	

CEQA SIGNIFICANCE DETERMINATIONS FOR TRANSPORTATION

a) Less-than-Significant Impact. The project is not anticipated to increase the number of vehicle or bicycle trips, pedestrian use, volume-to-capacity ratio, or congestion at intersections along Mattole Road, Wilder Ridge Road, or other roads in the project area. The project would not be in conflict with any adopted plans, policies, or programs that support alternative transportation, and would be consistent with the goals and policies of the *Humboldt County General Plan* (Humboldt County 2017) and the *Humboldt County Association of Governments Regional Transportation Plan* (HCAOG 2008), *Variety in Rural Options of Mobility (VROOM)* (HCAOG 2017b). Alternative forms of transportation (e.g., pedestrian, bicycles) would be allowed to pass through the project area similar to motorized traffic throughout construction. As described in AMM TRANS-1 below, Humboldt County will prepare a traffic management plan (TMP) to address construction-related impacts on traffic circulation on Mattole Road and the Honeydew community The potential for the project to conflict with traffic circulation plans would be less than significant.

b) Less-than-Significant Impact. Based on CEQA Guidelines, Section 15064.3(b), vehicle miles travelled as a result of the project would be less than significant. The primary purpose of the project is to provide for safer and more efficient traffic circulation. The temporary detour route would be approximately 0.6 mile long. Because it would be a single-lane crossing, traffic may have short delays, but the impact would be minor. Construction-related traffic on Mattole

Road and other areas roads is anticipated to increase the ADT by about 20 percent. This increase would, however, be temporary and is expected to occur during non-peak hours. There would not be a lowered level of service during the construction phase of the project, as either Mattole Road and the existing bridge at Honeydew Bridge would remain passable during the first year of construction and a suitable detour would be in place to maintain through traffic during the second year of construction. Alternative, although longer, routes exist that could be used to reach areas on either side of the Mattole River, if necessary. Any impacts on traffic during construction would be temporary and less than significant.

c) No Impact. The project would not result in the creation of sharp curves, dangerous intersections, or incompatible uses. Road and bridge improvements are expected to improve traffic safety.

e) Less-than-Significant Impact. During the first year of construction, the existing Honeydew Bridge would remain open to through traffic. Constraints associated with the existing bridge's capability to accommodate large vehicles would remain during the first year. During the second construction season, a temporary detour route would be installed roughly 1,600 feet west (downstream) from the existing bridge to maintain a single lane of traffic over the Mattole River, including pedestrians and bicyclists. The temporary bridge would be capable of carrying 80,000-pound loads (i.e., the weight of a highway legal tractor/trailer combination). Emergency vehicles will be given priority for passage through the project area. Local police and fire departments would be notified of the detour before construction. Construction would neither inhibit nor reduce emergency service access or response times in the project area and surrounding community with the use of AMM EMER-1 described below in the Utilities and Public Services section of this CEQA checklist. Although some temporary, short-duration disruptions to normal traffic operation could occur during project construction, the impact on emergency vehicle access would be less than significant.

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

Avoidance and Minimization Measures

Project impacts on traffic would be the same under the three project action alternatives. In addition to AMM EMER-1 described in the Utilities and Public Services section of this CEQA checklist, the following AMM will reduce traffic impacts for all project action alternatives during construction:

- **AMM TRANS-1: Construction Traffic Management Plan.** Before construction, Humboldt County will prepare a traffic management plan (TMP) to address construction-related impacts on traffic circulation on Mattole Road and the Honeydew community. Project impacts on traffic would be the same under all three project build alternatives. The AMMs will be further developed in the TMP. The TMP will include, at minimum, the following elements:

    - Public notification (e.g., brochures, telephone hotline, mailers, project website) of roadway information before the start of construction so that travelers and residents may plan accordingly.

- Signage (e.g., portable, changeable message signs or approved orange construction signage) providing travel delay or alternative route information will be used at major intersections associated with Mattole Road, such as at the Mattole Road/US 101 intersection (Exit 663) and at the start of Mattole Road in Ferndale. Signage will also be used in the community of Honeydew to alert travelers and residents to road construction activities. Other, lesser regional road intersections may also be equipped with signage.

- The County will coordinate with local responder agencies (e.g., law enforcement, fire, medical) to develop an incident priority response plan through the work zone to minimize or avoid potential emergency response delays during construction.

- Access to side roads and residences will be maintained at all times. When work or traffic queues extend through an intersection, additional traffic control will be required at the intersection.

- Bicycles and pedestrians will be accommodated through the work zone during construction.

Mitigation Measures

No project-specific mitigation is required for this environmental resource issue.

3.2.18. TRIBAL CULTURAL RESOURCES

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	**Significant and Unavoidable Impact**	**Less-Than-Significant with Mitigation Incorporated**	**Less-Than-Significant Impact**	**No Impact**
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 section 5020.1(k), or				**X**
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 Public Resources Code 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.				**X**

CEQA SIGNIFICANCE DETERMINATIONS FOR TRIBAL CULTURAL RESOURCES

No Impact. AB52 (AB 52) was passed in 2014 and amends sections of CEQA relating to Native Americans. AB 52 establishes a new category, named Tribal cultural resources, and states that a project with an effect that may cause a substantial adverse change in the significance if a Tribal cultural resource may have a significant impact on the environment. Section 21074 was added to the PRC to define cultural resource, as follows:

- 21074. (a) "Tribal cultural resources" are either of the following:

Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

- Included or determined to be eligible for inclusion in the CRHR.

- Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1 of the PRC.

- 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 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

- A cultural landscape that meets the criteria of subdivision (a) is a Tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

- A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "non-unique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a Tribal cultural resource if it conforms to the criteria of subdivision (a).

AB 52 requires the CEQA lead agency to begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the project area if the tribe requests the lead agency to inform them, in writing, of projects in that area, and the tribe requests consultation, before the determination of whether a negative declaration, mitigated negative declaration, or environmental impact report is required. In addition, AB 52 includes time limits for certain response regarding consultation, as follows:

- Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice;

- After provision of the formal notification by the lead agency, the California Native American tribe has 30 days to request consultation; and

- The lead agency must begin the consultation process within 30 days of receiving a California Native American tribe'

Despite the intensive identification effort employed during the investigation of cultural resources conducted for the project, no artifacts, features, sites, or other cultural resources were identified aside from the existing Honeydew Bridge. Background research found previously reported locations of two indigenous upper Mattole village sites several hundred meters upstream and downstream of the project's APE. A letter was sent by the project archaeologist on June 18, 2013 (Roscoe and Associates. 2013) to the NAHC requesting a search of the Sacred Lands Inventory File and a current list of local Native American groups and individuals who may have interests and/or concerns with the project. The NAHC responded on June 18, 2013 that the search of the Sacred Lands file did not indicate the presence of Native American cultural resources in the vicinity of the project area. Also included in the letter was a list of Native American contacts that may have knowledge of cultural resources in the project area. The following contacts included on the NAHC list were sent letters on June 27, 2013 requesting information and help in identifying and protecting cultural resources that could be affected by the project:

- Bear River Band of the Rohnerville Rancheria - Barry Brenard, Chairperson; Edwin Smith, Environmental Coordinator/Cultural; Erika Collins, Tribal Historic Preservation Officer (THPO)

- Intertribal Sinkyone Wilderness Council - Hawk Rosales, Executive Director

The Intertribal Sinkyone Wilderness Council did not respond to written letter, email, or follow-up phone calls (Roscoe and Associates 2013). Erika Collins, THPO for the Bear River Band of the Rohnerville Rancheria requested to accompany the field crew to the project area.

A pedestrian field survey of the APE was completed by cultural staff, accompanied by Erika Collins, THPO for the Bear River Band of Rohnerville Rancheria, on June 27, 2013 (Roscoe and Associates 2013). Neither of the village sites mentioned in the background research were relocated as part of the field study conducted for the project because of distance from the APE. No other comments were received as a result of tribal outreach. Based on the responses received to date, it is unlikely that the project site contains tribal cultural resources, as defined in PRC 21074. The project would have no impact on known tribal cultural resources. If previously unknown resources are inadvertently encountered during project construction, AMM CUL-1 and AMM CUL-2 will be used to avoid impacts on cultural resources and human remains.

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

Avoidance and Minimization Measures

If previously unknown resources are inadvertently encountered during project construction, AMM CUL-1 and AMM CUL-2 described in the Cultural Resources section of this CEQA checklist will be used to avoid impacts on cultural resources and human remains.

Mitigation Measures

No project-specific mitigation is required for this environmental resource issue.

3.2.19. UTILITIES AND SERVICE SYSTEMS

Would the project:	Significant and Unavoidable Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?				**X**
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				**X**
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				**X**
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			**X**	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				**X**

CEQA SIGNIFICANCE DETERMINATIONS FOR UTILITIES AND SERVICE SYSTEMS

a, b, c) No Impact. The project would not induce growth and does not include any wastewater treatment components. The new bridge structure would be slightly wider than the existing bridge and would introduce an additional number of impervious surfaces; however, there would be no impact on existing storm water facilities or water supplies in the area. The project would not require the relocation or construction of electric power, natural gas, or telecommunication facilities.

d) Less-than-Significant Impact. Construction activities would generate solid waste in the form of demolished materials, metal pilings, and other trash. Solid waste generated at the project site would be disposed of at a suitable landfill facility in compliance with local, state, and federal regulations pertaining to solid waste disposal. Disposal of potentially hazardous solid waste such as treated wood waste and painted surfaces that may contain lead are addressed in the Hazards and Hazardous Materials section of this CEQA Appendix G checklist and will be

disposed of in accordance with Caltrans Special Provisions at a suitable facility. The project is not likely to generate solid waste in amounts that would adversely affect the existing capacity of the local landfill. The contractor would be responsible for removing the existing bridge from the site.

e) No Impact. The project will be implemented in accordance with all relevant federal, state, and local management and reductions statutes and regulations related to solid waste.

Avoidance and Minimization Measures

No AMMs are required for this environmental resource issue.

Mitigation Measures

No project-specific mitigation is required for this environmental resource issue.

3.2.20. WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Significant and Unavoidable Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?			X	
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?		X		
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?			X	
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?			X	

CEQA SIGNIFICANCE DETERMINATIONS FOR WILDFIRE

Senate Bill 1241 required the Office of Planning and Research, the Natural Resources Agency, and CAL FIRE to develop amendments to the “CEQA Checklist” for the inclusion of questions related to fire hazard impacts for projects located on lands classified as very high fire hazard severity zones. The 2018 updates to the CEQA Guidelines expanded this to include projects “near” these very high fire hazard severity zones.

a) Less-than-Significant Impact. The project is not anticipated to significantly impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan because vehicular access would be maintained through the project area during construction. Emergency vehicles will be given priority for passage through the project area. Local police and fire departments would be notified of the detour before construction. Construction would neither inhibit nor reduce emergency service access or response times in the project area and surrounding community with the use of AMM EMER-1 described above in the Public Services section of this CEQA checklist. Although some temporary, short-duration disruptions to normal traffic operation could occur during project construction, the impact on emergency response or evacuation would be less than significant.

b) Less-than-Significant Impact with Mitigation Incorporated. The project area is within a rural area along a river corridor and adjacent to steep, forested hillsides. According to the CAL FIRE map of Humboldt County Fire Hazard Severity Zones in State Responsibility Area (CAL FIRE 2021), the immediate project area in along the Mattole River channel is identified as a moderate severity zone surrounded by a high severity zone outside the main river channel. The use of construction equipment in and around vegetated areas increases the potential for wildfires to be ignited. The impact would be less than significant with mitigation incorporated. MM HAZ-5 Wildland Fire described in the Hazards and Hazardous Materials section of this CEQA checklist will be used to reduce the risk of wildfire associated with project construction to a less-than-significant level.

c) Less-than Significant Impact. The project would replace existing road approaches and an existing bridge in a similar alignment. Roads present a common risk of wildland fire ignition by their nature due to the motor vehicles that use them. Conversely, roads also provide a potential barrier to the spread of wildland fire. While project construction would temporarily increase the potential for accidental wildland fire ignitions, project operation would be consistent with existing conditions and would not significantly increase the potential for wildland fire. Aside for occasional road maintenance, no project operation activities are anticipated that would significantly increase wildland fire potential. This impact would be less than significant.

d) Less-than-Significant Impact. The replacement structure was designed for the HL93, Tandem, and P15 Permit Design vehicle loadings as specified in Caltrans Bridge Design Specifications, Seismic Design Criteria V1.6, and AASHTO 6th Edition. The hydraulic design criteria established in the Caltrans Local Procedures Manual prescribe that the structure be capable of conveying the base or 100-year flood (Q100) and passing the 50-year flood (Q50) without causing objectionable backwater, excessive flow velocities or encroaching on through-traffic lanes. In addition, AASHTO requires at least 3 feet of freeboard (clearance) above the 50-year flood or flood of record. According to the Hydrologic Analysis performed by Pacific Hydrologic Incorporated (2020), the minimum soffit elevation required to meet these criteria is 335.41 feet. There is a high potential for significant volumes of drift (e.g., uprooted trees and other debris) to be carried by the Mattole River during periods of high flow. The proposed bridge was designed to provide more clearance for drift than the minimum recommended. The potential for post-fire hazards to affect the environment in and downstream of the project area is less than significant.

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

Avoidance and Minimization Measures

AMM EMER-1 described above in the Public Services section of this CEQA checklist will also be used to avoid or minimize short-term disruptions to traffic.

Mitigation Measures

Mitigation measure MM HAZ-5 Wildland Fire described in the Hazards and Hazardous Materials section of this CEQA checklist will be used to reduce the risk of wildfire associated with project construction to a less-than-significant level.

3.2.21. MANDATORY FINDINGS OF SIGNIFICANCE

	Significant and Unavoidable Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		**X**		
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?				**X**
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	**X**			

CEQA SIGNIFICANCE DETERMINATIONS FOR MANDATORY FINDINGS OF SIGNIFICANCE

a) ***Less than Significant with Mitigation Incorporated.*** As discussed in the preceding sections, the project has a potential to result in adverse effects on biological resources and cultural resources. Potential impacts on wildlife resources are discussed in detail in the Biological Resources section of this CEQA checklist. AMMs and mitigation measures required to reduce the significance of project impacts are summarized in Chapter 5. With implementation of these measures, potential impacts would be avoided or reduced to a less-than-significant level.

The Honeydew Bridge is a significant historical resource, eligible for listing in the NRHP under Criterion C. Pursuant to §15064.5, the impact would be significant and unavoidable. Surveys, records searches, and reviews of historical collections did not result in the identification of any other known historical resources would be affected by project implementation. No other historical or archaeological resources were identified in the APE pursuant to Section 15064.5. AMMs and mitigation measures required to reduce the significance of project impacts If previously unknown resources are inadvertently encountered during project construction, AMM are summarized in Chapter 5.

b) No Impact. CEQA Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. Section 2.4 of this DEIR/EA considers the cumulative effects of past, present, and reasonably foreseeable development projects dating from 2010 onward that, together with the proposed Honeydew Bridge Replacement Project, could potentially have a substantial or considerable contribution to cumulative environmental impacts in the resource study area (RSA). This analysis reviews known projects that have affected the reach of the Mattole River in the project vicinity or the Honeydew community in the previous 10 years (Table 2.4.2-1). The reasonably foreseeable future is generally a 20-year timeframe.

Although some direct and indirect impacts of the project would be significant but mitigable to a less-than-significant level and some would be significant and unavoidable, the incremental impacts of the environmental resources addressed in the CEQA checklist would not be cumulatively considerable when assessed in the context of the resource's unique RSA. As a result, the project would have no impacts that are individually limited, but cumulatively considerable.

c) Significant and Unavoidable Impact. The proposed Honeydew Bridge replacement project could result in a variety of impacts on human beings, particularly during the construction phase. Potential adverse effects on the human environment are related to temporary impacts on hazards and hazardous materials and public services/emergency response that can be mitigated to a less-than-significant level. Project-related impacts on other environmental resources in the human environment would be less than significant. Conservation measures would be used to maintain these potential impacts at less-than-significant levels. Removal of the existing historic bridge would be a significant and unavoidable impact; however, its removal will be done so in consultation between Caltrans and SHPO, and in accordance with the Section 106 PA. Chapter 5 contains conservation and mitigation measures that will be used to avoid or minimize potentially adverse effects on humans resulting from the construction of the project. Because of the significant and unavoidable impact created by removal of the historic bridge, this mandatory finding of significance would be significant and unavoidable.

AVOIDANCE AND MINIMIZATION MEASURES AND MITIGATION MEASURES

Following are the AMMs and project mitigation measures that will be used during project implementation. AMMs include standard construction criteria and best management practices used to avoid potential adverse environmental effects that are otherwise not significant under

CEQA. Mitigation measures are project-specific and are designed to minimize a project's significant environmental impacts.

Avoidance and Minimization Measures

Aesthetics

The following AMMs would be used during construction to reduce impacts on the visual environment:

- **AMM VIS-1:** Manipulate landscape components such as landform and vegetation to control the visibility of project actions from the more visibly sensitive areas, such as recreational locations along the Mattole River or the Honeydew Country Store/Post Office. Avoid tree removal in and adjacent to recreation sites.

- **AMM VIS-2:** Revegetate cut or fill slopes where trees were removed using native shrubs, grasses, and forbs, and replace riparian trees if any are removed from riparian areas as a result of construction.

- **AMM VIS-3:** Use construction materials that are visually compatible with the landscape (e.g., non-glare metal guard rails and low-chroma pavement consistent with colors found in the adjacent landscape). Use reflective road paint (if pavement is used) and highly reflective signs only as required by law.

- **AMM VIS-4:** Minimize road cut slope gradients to blend with the adjacent topography.

Air Quality

The project would include implementation of the following AMMs during construction as recommended by the Air District:

- **AMM AIR-1:** Cover open-bodied trucks when used for transporting materials likely to give rise to airborne dust.

- **AMM AIR-2:** Install and use hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Employ containment methods during sandblasting and other similar operations.

- **AMM AIR-3:** Use water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or clearing of land.

- **AMM AIR-4:** Apply asphalt, rock, or water on dirt roads, material stockpiles, and other surfaces that can give rise to airborne dusts.

- **AMM AIR-5:** Pave and maintain roadways in a clean condition.

- **AMM AIR-6:** Promptly remove earth or other track-out material from paved streets onto which earth or other material has been transported by trucking or earthmoving equipment, erosion by water, or other means.

- **AMM AIR-7:** Comply with Title 13 CCR 2485, which restricts idling of construction vehicles to no longer than 5 consecutive minutes.

Biological Resources

Plants

Although implementation of the project is not anticipated to impact any special-status plant species, AMM VIS-1 and AMM VIS-2 described in Section 2.1.7, and AMM NAT-1 Protection of Riparian Habitat, described below will be used to minimize project-related impacts on vegetation.

Natural Communities

The following AMM will be used during construction to reduce impacts on the natural communities found in the BSA:

- **AMM NAT-1: Protection of Riparian Habitat.** The project was designed and will be constructed to avoid and minimize the removal of riparian vegetation to the maximum extent practicable. Staging areas and construction access routes shall avoid encroachment into riparian vegetation where practicable and minimize encroachment where complete avoidance is not practicable. “Avoided” riparian habitat shall be clearly identified in the construction drawings and contractor work plans. Exclusionary fencing shall be installed to mark boundaries of all avoided riparian areas adjacent to the work area. All pedestrian and vehicular traffic into the avoided areas shall be prohibited during construction. The exclusionary fencing shall be inspected and maintained on a regular basis throughout project construction.

Cultural Resources

It is Caltrans' policy to avoid cultural resources whenever possible. Further investigations may be needed if archaeological sites, features, or other phenomena are discovered and cannot be avoided by the project. If buried cultural materials are encountered during construction, it is Caltrans' policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Additional survey will be required if the project changes to include areas not previously surveyed.

The following measures will be used to ensure that potential project impacts on significant cultural resources are avoided or reduced to less-than-significant levels:

- **AMM CUL-1: Inadvertent Discovery of Cultural Resources.** If cultural resources, such as chipped or ground stone, historic debris, building foundations, or bone are discovered during ground-disturbance activities, work will be stopped within 20 meters

(66 feet) of the discovery, per the requirements of CEQA (Title 14 CCR 15064.5 (f)) and Section 106 (36 CFR 800.13). Work near the archaeological finds will not resume until a professional archaeologist, who meets the Secretary of the Interior's Standards and Guidelines, has evaluated the materials and offered recommendations for further action.

- **AMM CUL-2: Inadvertent Discovery of Human Remains.** If human remains are discovered during project construction, work will stop at the discovery location, within 20 meters (66 feet), and any nearby area reasonably suspected to overlie adjacent to human remains (Health and Safety Code, Section 7050.5). The Humboldt County coroner will be contacted to determine whether the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (PRC, Section 5097). The coroner will contact the NAHC. The descendants or most likely descendants of the deceased will be contacted, and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in PRC, Section 5097.98. Work may resume if NAHC is unable to identify a descendant or the descendant failed to make a recommendation.

Geology/Soils/Seismic/Topography

The project will be conducted in accordance with all federal, state, and local regulatory requirements previously described. In addition, AMM HYDRO-1 described under, Hydrology and Floodplain, will be incorporated into the project to reduce the potential for soil erosion during construction.

Paleontology

The project will be conducted in accordance with all federal, state, and local regulatory requirements previously described. In addition, the following AMM will be incorporated into the project to minimize potential effects on paleontological resources:

- **AMM PALEO-1:** Caltrans Standard Specification 14-7.03 requires that if unanticipated paleontological resources are discovered, work shall halt within 60 feet of the discovery and the engineer shall be notified. Compliance with this measure shall ensure that potential unknown paleontological resources are properly handled and secured if discovered.

Greenhouse Gas Emissions

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

- **AMM GHG-1.**

  - The project shall comply with Caltrans Standard Specifications Section 14-8 regarding air quality.

  - In accordance with Caltrans Standard Specifications, the contractor shall comply with all of the Air District rules, ordinances, and regulations regarding air quality restrictions.

The project shall comply with Title 13 CCR 2485 which restricts construction vehicles idling to no longer than 5 consecutive minutes.

Hydrology and Water Quality

The project will be conducted in accordance with all federal, state, and local regulatory requirements previously described. In addition, the following AMMs will be incorporated into the project to minimize potential effects on water quality:

- **AMM HYDRO-1 - Erosion and Sedimentation Control:** Erosion control measures will be implemented during construction of the project in non-riparian upland areas. Erosion control measures to be implemented by the County include the following:

  - Areas where wetland and upland vegetation need to be removed shall be identified in advance of ground disturbance and the “area of disturbance” at each site will be restricted to only those areas necessary to complete each project.

  - To the maximum extent practicable, activities that increase the erosion potential will 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. All bare mineral soil exposed in conjunction with construction, maintenance, or repair, will be treated for erosion before the onset of any rainfall event capable of generating runoff, or at the end of the yearly work period, whichever comes first. Channel access routes and areas designated for equipment staging, maintenance, and fueling will be groomed, bermed, and straw mulched and seeded as necessary to minimize the potential for the release of fine sediment to the stream or nearby upland areas. Erosion control criteria will consist of at least 2 to 4 inches of straw mulch and 100 pounds per acre native seed when reseeding occurs. No annual vegetation or Italian ryegrass (*Festuca perennis*) shall be used.

  - BMPs, such as silt fences, straw wattles, or earthen berms, will be installed between staging areas or temporary material stockpiles and the stream bank to

intercept sediment before it reaches the waterway. The BMPs will be installed before 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.

- If temporary spoil or construction material sites are used, they will be located such that they do not drain directly into the stream, if possible. If a spoils/material site may drain into a surface water feature, catch basins or berms will be constructed to intercept sediment before it reaches the feature. Temporary storage sites will be graded, vegetated, and mulched at end of project to reduce the potential for erosion.

- All construction debris associated with the project will be removed from the site and disposed of appropriately.

- Sediment control measures shall be in place before the onset of the rainy season and will be monitored and maintained in good working condition until disturbed areas have been revegetated with native species.

- **AMM HYDRO-2 - Prevention of Accidental Spills:** The release of hydrocarbon contamination (TPH) and other contaminants will be safeguarded against to the greatest extent feasible. If leaks or spills do occur, they will be controlled immediately. All spilled contaminants and contaminated soil will be recovered from the site and stored in Department of Transportation approved containment vessels. All stored contaminated or hazardous material will be removed from the site in a timely manner and disposed of at an approved hazardous waste disposal facility.

    - Equipment parking, maintenance, and fueling will only occur at designated upland staging areas, with all staging locations adequately offset from the active stream channel.

    - All equipment entering the stream channel will be inspected and cleaned at an off-site location before being transported to the work site.

    - Light equipment (e.g., generators, welders, and pumps) as well as heavy equipment (e.g., drill rig) parked within riparian areas will use drip pans or other devices (e.g., absorbent blankets, sheet barriers) as needed to prevent contaminants from reaching the watercourse.

    - Equipment will be inspected for leaks before each shift, throughout the work shift, and at the end of the shift each day.

    - Maintenance involving the removal or repair of hydraulic cylinders or hoses or of reservoirs containing hazardous products will be performed over impervious fabric resistant to TPH.

- Proper spill kits will be kept onsite through the duration of each project. In the event of a spill, CDFW will be notified and consulted regarding cleanup procedures.

- All activities related to fueling, lubing, and maintenance will be performed in the designated staging area unless equipment has been immobilized due to a mechanical failure. In those instances, every effort will be made to safeguard against and control the release of contaminants.

The functional condition of fuel transfer pumps, hose assemblies, and emergency shutoff switches will be evaluated before fueling operations. Personnel tasked with fueling will remain near the fuel pump's emergency shutoff switch during fueling events. Topping off of fuel tanks will not occur.

Public Services

As with any roadway construction project, it is a possibility that a lane or facility closure during construction could affect emergency service response time. Therefore, the following AMM will be used during construction.

- **AMM EMER-1.** During project construction, Caltrans will coordinate with local emergency service providers to keep them informed of the project construction schedule and any detour routes to avoid or minimize any impacts. Additionally, the project Traffic Management Plan will manage and minimize any circulation impacts during construction.

Transportation

Project impacts on traffic would be the same under the three proposed project action alternatives. In addition to AMM EMER-1 described in the Utilities and Public Services section of this CEQA checklist, the following AMM will reduce traffic impacts for all project action alternatives during construction:

- **AMM TRANS-1. Construction Traffic Management Plan.** Before construction, the County will prepare a traffic management plan (TMP) to address construction-related impacts on traffic circulation on Mattole Road and the Honeydew community. Project impacts on traffic would be the same under all three project build alternatives. The AMMs will be further developed in the TMP. The TMP will include, at minimum, the following elements:

    - Public notification (e.g., brochures, telephone hotline, mailers, project website) of roadway information before the start of construction so that travelers and residents may plan accordingly.

    - Signage (e.g., portable, changeable message signs or approved orange construction signage) providing travel delay or alternative route information will be used at major intersections associated with Mattole Road, such as at the Mattole Road/US 101 intersection (Exit 663) and at the start of Mattole Road in

Ferndale. Signage will also be used in the community of Honeydew to alert travelers and residents to road construction activities. Other, lesser regional road intersections may also be equipped with signage.

- The County will coordinate with local responder agencies (e.g., law enforcement, fire, medical) to develop an incident priority response plan through the work zone to minimize or avoid potential emergency response delays during construction.

- Access to side roads and residences will be maintained at all times. When work or traffic queues extend through an intersection, additional traffic control will be required at the intersection.

- Bicycles and pedestrians will be accommodated through the work zone during construction.

Tribal Cultural Resources

If previously unknown resources are inadvertently encountered during project construction, AMM CUL-1 and AMM CUL-2 described in the Cultural Resources section of this CEQA checklist will be used to avoid impacts on cultural resources and human remains.

Wildfire

AMM EMER-1 described above in the Public Services section of this CEQA checklist will also be used to avoid or minimize short-term disruptions to traffic.

Mitigation Measures

Biological Resources

Animals

In addition to use of AMM HYDRO-1 and AMM HYDRO-2 described in Section 2.2.1, Hydrology and Floodplain; AMMs, and AMM NAT-1 described in Section 2.3.1, Natural Communities, the following mitigation measure will also be used to reduce the significance of project impacts on waters of the United States, including wetlands, in the BSA:

- **MM TES-1: Northern Spotted Owl and Marbled Murrelet.** Ambient sound level often has a substantial time-of-day component, with nighttime, dawn, and dusk ambient sound levels generally 5–10 dB lower than typical midday levels (see Appendix A in Environmental Protection Agency 1974). Marbled murrelet flights into nests to feed nestlings and for nest-tending exchanges are concentrated around dawn and dusk (Nelson and Hamer 1995), during the period when ambient noise levels tend to be lower than average daytime levels (Environmental Protection Agency 1974). Specifically, for marbled murrelet, the harassment threshold distances provided in Table 1 of the guidance document apply to noise-generating activities occurring during the midday period, when the risk of harassment is lower. The following measure is recommended to

avoid the potential for adverse effects on marbled murrelet in or near the vicinity of the BSA:

- All work that produces noise that is greater than the existing ambient pre-project sound level (High, 81–90 dB) will be conducted during weekdays, during daylight hours beginning 2 hours after sunrise and ending 2 hours before sunset.

- **MM TES-2: Anadromous Fishes and Essential Fish Habitat.** In addition to AMM HYDRO-1 (Erosion and Sedimentation Controls), AMM HYDRO-2 (Prevention of Accidental Spills of Pollutants), AMM NAT-1 (Protection of Riparian Habitat), AMM VIS-2 (Revegetation), and AMM BIO-1 (Project Footprint), the following measures will be used to further avoid or minimize project-related impacts on anadromous fish:

  - The County shall adhere to a limited operating period during the low-flow season between June 15 and October 15 for all wetted channel construction work and any dewatering of the stream channel.

  - The County shall ensure that fish relocation activities are sequenced to minimize effects, including installing fish exclusion (e.g., block nets if conditions allow); or incrementally dewatering the stream to minimize stranding; electrofishing/ seining/ other capture and removal according to NMFS (NMFS 2000) and CDFW (Flosi et al. 2010) guidelines.

  - The County shall also ensure that captured individuals are kept in cool, shaded, aerated water, protected from overcrowding or other stressors, and separated by age classes to minimize predation.

  - The County shall implement erosion control measures, including a storm water pollution prevention plan, consistent with provisions of Caltrans Standard Specifications Section 20-2 and 20-3.

  - The County shall use clean gravels of a size suitable for spawning salmon to create all vehicle access paths and work pads within the original high-water mark of the stream channel with minimal channel disturbance.

  - The County shall remove any crushed rock used to surface access paths and work pads but leave the clean spawning-sized gravels in the channel graded to conform to the natural streambed contours at the end of in-water construction.

  - The County shall ensure that all fuel storage and refueling sites, concrete washouts, and any other hazardous materials are stored on the top of the bank at least 50 feet from surface water.

  - The County shall minimize disturbance of riparian vegetation and replant any riparian areas that must be cleared or otherwise disturbed according to the project's Mitigation and Monitoring Plan.

- The County shall ensure that all construction equipment, pumps, hand tools, and personnel protective equipment that is to be used in the stream channel is subjected to inspection and appropriate treatments to prevent the spread of invasive plant and aquatic invertebrate species.

In addition to using AMM HYDRO-1 and AMM HYDRO-2 described in Section 2.2.1, Hydrology and Floodplain; AMM NAT-1 described in Section 2.3.1, Natural Communities; and AMM VIS-2 described in Section 2.1.7, Visual Resources/Aesthetic, the following mitigation measures will be used:

- **MM BIO-1: Project Footprint.** The project site footprint will be restricted to the minimum area necessary to complete the project.

- **MM BIO-2: Special-Status and Migratory Birds and Raptors.** The following measures will be used to avoid or minimize project-related impacts on special-status birds in or near the vicinity of the BSA:

  - If all necessary approvals have been obtained, potential nesting substrate (e.g., trees and shrubs) that will be cut down to accommodate construction should be felled and removed before the onset of the nesting season (February 15 through August 31), if practicable. This will help preclude nesting and substantially decrease the likelihood of direct impacts.

  - No more than 15 days before construction during the nesting bird season, a pre-construction survey for nesting white-tailed kite, northern goshawk, golden eagle, long-eared owl, Vaux's swift, olive-sided flycatcher, purple martin, yellow warbler, and yellow-breasted chat shall be conducted by a qualified biologist within the BSA and a 250-ft buffer around the BSA. During this survey, the biologist shall inspect all trees, shrubs, and other potential habitat for nests. If an active nest is found within 250-ft of the construction area, appropriate conservation measures (as determined by a qualified biologist) shall be implemented. These measures may include but are not limited to establishing a construction-free buffer zone around the active nest site, biological monitoring of the active nest site, and delaying construction activities in the vicinity of the active nest site until the young have fledged. The County will inform Caltrans if such an activity occurs.

- **MM BIO-3: Pallid Bat.** The following measures will be used to avoid or minimize project-related impacts on pallid bats:

  - To the extent practicable, removal of large trees with cavities and removal of the existing bridge shall occur before maternity colonies form (i.e., before March 1) or after young are volant (i.e., after August 15). The removal of the existing bridge during this time period may not be feasible, because the existing bridge must be removed during the in-water construction period (June 15 through October 15).

- Exclusionary devices may be placed over potential bat habitat on the existing bridge between August 15 and March 1 during the year before construction to prevent bats from forming maternity colonies.

- If construction (including the removal of large trees and the existing bridge) occurs during the non-volant season (March 1 through August 15), a qualified biologist shall conduct a pre-construction survey of the BSA to locate maternity colonies. The pre-construction survey will be performed no more than 14 days before the implementation of construction activities (including staging and equipment access). If a lapse in construction activities for 14 days or longer occurs between those dates, another pre-construction survey will be performed. If a maternity colony is present, bridge or tree removal shall not occur until it is determined that the young are volant.

- **MM BIO-4: Ring-tailed Cat.** The following measures will be used to avoid or minimize project-related impacts on ring-tailed cats:

  - Tree removal will be minimized, and large snags and old growth trees will be avoided, to the extent feasible.

  - Remove all trees during the non-denning (July 1–April 30). Trees may be removed during the denning season for ring-tailed cat (May 1–June 30) if surveys during the denning season reveal no potential natal or denning/nesting trees within the removal area.

  - If vegetation removal is to occur during the denning season (May 1-June 30), a qualified biologist will survey for potential natal or maternity den trees using stand search techniques within areas slated for vegetation removal and within 375 feet of the vegetation removal area. The survey will be performed no more than 2 weeks before the implementation of vegetation removal. During the denning period, trees that have maternal den characteristics shall be retained until the day after all other trees within a 375-foot radius have been felled.

  - If no potential denning trees are observed within 375 feet of vegetation removal, these restrictions would not be necessary.

Wetlands

In addition to use of AMM HYDRO-1 and AMM HYDRO-2 described in Section 2.2.1, Hydrology and Floodplain; AMMs AIR-1 through -6 described in Section 2.2.6, Air Quality; and AMM NAT-1 described in Section 2.3.1, Natural Communities, the following mitigation measure will also be used to reduce the significance of project impacts on waters of the United States, including wetlands, in the BSA:

- **MM WET-1:** Before any discharge of dredged or fill material into waters of the United States, including wetlands, authorization under a Nationwide Permit shall be obtained from USACE. For any features determined not to be subject to USACE jurisdiction

during the verification process, authorization to discharge shall be obtained from the Regional Board. For fill requiring a USACE permit, water quality certification shall be obtained from the Regional Board before discharge of dredged or fill material.

- **MM WET-2:** Before any activities that would obstruct the flow of, or alter the bed, channel, or bank of any intermittent or ephemeral creeks, notification of streambed alteration shall be submitted to the CDFW and, if required, a streambed alteration agreement shall be obtained from CDFW.

- **MM WET-3:** Any monitoring, maintenance, and reporting required by the regulatory agencies (i.e., USACE, Regional Board, and CDFW) shall be implemented and completed. All measures contained in the permits or associated with agency approvals shall be implemented.

- **MM WET-4:** Impacts on riparian wetlands will be mitigated onsite. For the purposes of this mitigation, riparian habitat is synonymous with riparian wetlands. Wetlands mitigation planting will occur on the banks of the Mattole River after the northern work pad and the temporary detour road have been removed. The plantings will be done in kind and at a 3:1 ratio.

Hazards and Hazardous Materials

In addition to use of AMM HYDRO-2 - Prevention of Accidental Spills of Pollutants, the following mitigation measures will be used to reduce potential project-related impacts related to hazardous materials and waste to no impact or less-than-significant impact levels:

- **MM HAZ-1 - Inadvertent Discovery of Hazardous Materials or Waste:** Even when all appropriate procedures to identify and characterize contamination have been followed, it is still possible to discover previously unknown contamination and hazards during construction activities. Contamination that is unknown until exposure and discovery during construction will require sampling and testing before removal from the site and subsequent disposal. Health and Safety Code 25914.2 specifies that unanticipated hazardous substances (including hazardous waste) and/or asbestos encountered during construction cannot legally be tested or managed and removed by the prime contractor who discovered it. Hazardous substances and asbestos can only be managed by the prime contractor if this work was specifically included in the original contract documents. Therefore, a contract change order cannot be used in these situations. Caltrans has an on-call Construction Emergency Response Contract (Department use only) managed by the Division of Environmental Analysis, Hazardous Waste, Air, and Noise Office that can be accessed to have appropriate testing and disposal performed for Department administered projects. Consult the current *Unanticipated Hazardous Waste Decision Tree* (Caltrans 2014) (Figure 2-8 in the DEIR/EA).

- **MM HAZ-2 - Asbestos:** The PSI determined that all suspected ACM did not contain asbestos above the laboratory detection limit. Despite the low levels of asbestos detected in the project area, NESHAP regulations require notification of the demolition to

be submitted to the Air District and the USEPA (NESHAP Section 61.145(b)). Notifications must contain certain specified information including but not limited to the scheduled start and completion date of the work, the location of the site, the names of operators or asbestos removal contractors, methods of removal and the amount of asbestos, and whether the operation is a demolition or renovation.

- **MM HAZ-3 - Lead-based Paint:** The following BMPs will be used when project activities involve the handling of LBP:

  - LBP shall be abated before planned construction/demolition by a licensed contractor in accordance with 17 CCR 3500.

  - LBP must be transported under a Uniform Hazardous Waste Manifest (Title 22 CCR, Section 6626.23). LBP must be disposed of either at a Class I landfill or at other landfills that have specific permits to accept these wastes.

  - Demolition and construction work shall be subject to the applicable work practices for LBP and lead hazards including the following:

    - California Construction Order 1532.1(a)

    - Lead-in-Construction Standard

    - Title 17, CCR (CCR), Division 1, Chapter 8

    - Work Practices for LBP and Lead Hazards

  - If more than 100 square or linear feet of lead-containing materials are disturbed, steps must be taken to prevent worker exposure to lead. The Department of Industrial Relations shall be notified at least 24 hours before beginning work.

- **MM HAZ 4 - Treated Wood Waste:** The County shall include provisions in the construction bid documents to ensure the proper removal and disposal of treated wood waste material found on the existing bridge. The following measure shall be implemented to reduce construction-related environmental impacts that could result from treated wood waste removal:

  - The contractor will remove treated wood waste following the alternative management standards specific under Caltrans Non-Special Stand Provision (NSSP) 14-11.14 for treated wood waste, as well as AB 332 AMS contained in statutes (Health and Safety Code section 25230 – 25230.18) and CCR Title 22, Chapter 34, Sections 67386.1 through 67386.12 (2020) for labeling, accumulation, off-site shipment tracking, notification, treatment, and disposal. All personnel that may come into contact with treated wood waste will receive, at a minimum, training on safe handling, sorting and segregating, storage, labeling (including date), and proper disposal methods.

- **MM HAZ 5 - Wildfire Potential:** The County shall include provisions in the construction bid documents to minimize the potential for ignition of wildfire as a result of project construction. The following measure shall be implemented to reduce construction-related wildfire ignition potential:

    - Per the requirements of PRC 4442, the County shall include a note on all construction plans that internal combustion engines shall be equipped with an operational spark arrester, or the engine must be equipped for the prevention of fire.

Noise

The following mitigation measure will be used to reduce potential project-related impacts related to noise:

- **MM NOI-1 Noise:** The proposed Humboldt County noise ordinance standards described in Table 3-2 will be used during project construction to avoid or minimize the adverse effects on sensitive receptors near the project area.

Wildfire

Mitigation measure MM HAZ-5 Wildland Fire described in the Hazards and Hazardous Materials section of this CEQA checklist will be used to reduce the risk of wildfire associated with project construction to a less-than-significant level.

3.3. Additional CEQA Considerations

3.3.1. CLIMATE CHANGE

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change by the United Nations and World Meteorological Organization in 1988 led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity, including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), and various hydrofluorocarbons (HFCs). CO_2 is the most abundant GHG; while it is a naturally occurring component of Earth’s atmosphere, fossil-fuel combustion is the main source of additional, human-generated CO_2.

Two terms are typically used when discussing how we address the impacts of climate change: “greenhouse gas mitigation” and “adaptation.” Greenhouse gas mitigation covers the activities and policies aimed at reducing GHG emissions to limit or “mitigate” the impacts of climate change.

Adaptation, on the other hand, is concerned with planning for and responding to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels). This analysis will include a discussion of both.

REGULATORY SETTING

This section outlines federal and state efforts to comprehensively reduce GHG emissions from transportation sources.

Federal

To date, no national standards have been established for nationwide mobile-source GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level.

The NEP) (42 USC Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

The FHWA recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. FHWA therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices (FHWA 2019). This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—“the triple bottom line of sustainability” (FHWA n.d.). Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life.

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects. The most important of these was the Energy Policy and Conservation Act of 1975 (42 USC Section 6201) and Corporate Average Fuel Economy (CAFE) Standards. This act establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the CAFE program based on each manufacturer’s average fuel economy for the portion of its vehicles produced for sale in the United States.

Energy Policy Act of 2005, 109th Congress H.R.6 (2005–2006): This act sets forth an energy research and development program covering: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) the establishment of the Office of Indian Energy Policy and Programs within the Department of Energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology.

The USEPA in conjunction with the National Highway Traffic Safety Administration is responsible for setting GHG emission standards for new cars and light-duty vehicles to significantly increase the fuel economy of all new passenger cars and light trucks sold in the United States. Fuel efficiency standards directly influence GHG emissions.

State

California has been innovative and proactive in addressing GHG emissions and climate change by passing multiple Senate and assembly bills (ABs) and EOs including, but not limited to, the following:

- **EO S-3-05 (June 1, 2005):** The goal of this EO is to reduce California's GHG emissions to: (1) year 2000 levels by 2010, (2) year 1990 levels by 2020, and (3) 80 percent below year 1990 levels by 2050. This goal was further reinforced with the passage of AB 32 in 2006 and Senate Bill (SB) 32 in 2016.

- **AB 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006:** AB 32 codified the 2020 GHG emissions reduction goals outlined in EO S-3-05, while further mandating that the California ARB create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The Legislature also intended that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020 (Health and Safety Code [H&SC] Section 38551(b)). The law requires ARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

- **EO S-01-07 (January 18, 2007):** This order sets forth the low carbon fuel standard for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 2020. ARB readopted the low carbon fuel standard regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the governor's 2030 and 2050 GHG reduction goals.

- **Senate Bill (SB) 375, Chapter 728, 2008, Sustainable Communities and Climate Protection:** This bill requires ARB to set regional emissions reduction targets for passenger vehicles. The Metropolitan Planning Organization for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan how it will achieve the emissions target for its region.

- **SB 391, Chapter 585, 2009, California Transportation Plan:** This bill requires the State's long-range transportation plan to identify strategies to address California's climate change goals under AB 32.

- **EO B-16-12 (March 2012)** orders State entities under the direction of the Governor, including ARB, the California Energy Commission, and the Public Utilities Commission, to support the rapid commercialization of zero-emission vehicles. It directs these entities to achieve various benchmarks related to zero-emission vehicles.

- **EO B-30-15 (April 2015)** establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of GHG emissions to implement measures,

pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets. It also directs ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent ($MMTCO_2e$).[6] Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, *Safeguarding California*, every 3 years, and to ensure that its provisions are fully implemented.

- **SB 32, Chapter 249, 2016,** codifies the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.
- **SB 1386, Chapter 545, 2016,** declared "it to be the policy of the state that the protection and management of natural and working lands … is an important strategy in meeting the state's greenhouse gas reduction goals, and would require all state agencies, departments, boards, and commissions to consider this policy when revising, adopting, or establishing policies, regulations, expenditures, or grant criteria relating to the protection and management of natural and working lands."
- **AB 134, Chapter 254, 2017,** allocates Greenhouse Gas Reduction Funds and other sources to various clean vehicle programs, demonstration/pilot projects, clean vehicle rebates and projects, and other emissions-reduction programs statewide.
- **SB 743, Chapter 386 (September 2013):** This bill changes the metric of consideration for transportation impacts pursuant to CEQA from a focus on automobile delay to alternative methods focused on vehicle miles travelled, to promote the state's goals of reducing greenhouse gas emissions and traffic related air pollution and promoting multimodal transportation while balancing the needs of congestion management and safety.
- **SB 150, Chapter 150, 2017, RTPs:** This bill requires ARB to prepare a report that assesses progress made by each metropolitan planning organization in meeting their established regional greenhouse gas emission reduction targets.
- **EO B-55-18 (September 2018)** sets a new statewide goal to achieve and maintain carbon neutrality no later than 23045. This goal is in addition to existing statewide targets of reducing GHG emissions.
- **EO N-19-19 (September 2019)** advances California's climate goals in part by directing the California State Transportation Agency to leverage annual transportation spending to reverse the trend of increased fuel consumption and reduce GHG emissions from the transportation sector. It orders a focus on transportation investments near housing, managing congestion, and encouraging alternatives to driving. This EO also directs ARB to encourage automakers to produce more clean vehicles, formulate ways to help Californians purchase them, and propose strategies to increase demand for zero-emission vehicles.

[6] GHGs differ in how much heat each trap in the atmosphere (global warming potential). CO_2 is the most important GHG, so amounts of other gases are expressed relative to CO_2, using a metric called "carbon dioxide equivalent" (CO_2e). The global warming potential of CO_2 is assigned a value of 1, and the global warming potential of other gases is assessed as multiples of CO_2.

ENVIRONMENTAL SETTING

Honeydew is a rural, unincorporated Humboldt County community centered on the Mattole River. Development in the project area and vicinity consists of widely spaced rural residential and light commercial development, including the Honeydew Country Store/Post Office, and interspersions of agricultural crop and grazing lands.

Mattole Road is a categorized as a rural major collector by Humboldt County. It is a narrow, two-lane road that serves as the only connection between many communities in the Mattole Valley, including Petrolia, Capetown, Honeydew, and Bull Creek, and is the primary route used by these communities to access Highway 101. It is a critical route for the transportation of agricultural products in and out of the area, as well as for emergency and maintenance services. From Highway 101, Mattole Road travels through the Humboldt Redwoods State Park, a popular tourist destination, before continuing to the community of Honeydew. Current ADT numbers are approximately 289 on the weekend and roughly 380 during weekdays, for a weekly average of 353 (Foster pers. comm. 2021).

Burrel Road is a rural, local road that provides access to several residences and other agricultural properties on the north side of the Mattole River in Honeydew. It is narrow and unpaved. Burrel Road begins at Mattole Road near the northwest corner of Honeydew Bridge, paralleling the north bank of the river before turning north and becoming a dirt track roughly 2 miles west of its origin. Burrel Road is lightly used by a limited number of residents for private property access.

Wilder Ridge Road begins just south of the Honeydew Bridge and parallels the King Range National Conservation Area until its end at the community of Ettersburg where it splits into Ettersburg Road and French Ranch Road. Wilder Ridge Road is classified as a minor collector and is a rural, two-lane road serving as a connection between the Honeydew and Ettersburg communities and as an alternative route to Highway 101 from Honeydew.

In the rural portions of Humboldt County, air quality concerns are mostly related to industrial emission sources rather than from urbanization and mobile sources. Air quality is regulated through emissions limits for individual sources of pollution such as criteria air pollutants. Mobile sources of pollutants, such as toxic air contaminants, are regulated through emission standards for on-road motor vehicles. The Air District prepares a risk assessment for all major point sources of toxic air contaminants within the NCAB every 4 years (Humboldt County 2002). Humboldt County has also prepared a draft Climate Action Plan (2012) as part of its General Plan element update. This plan establishes milestones to reduce both GHG and air pollution emissions in Humboldt County.

A GHG emissions inventory estimates the amount of GHGs discharged into the atmosphere by specific sources over a period of time, such as a calendar year. Tracking annual GHG emissions allows countries, states, and smaller jurisdictions to understand how emissions are changing and what actions may be needed to attain emission reduction goals. USEPA is responsible for documenting GHG emissions nationwide, and the ARB does so for the state, as required by H&SC Section 39607.4 (Figure 3-1).

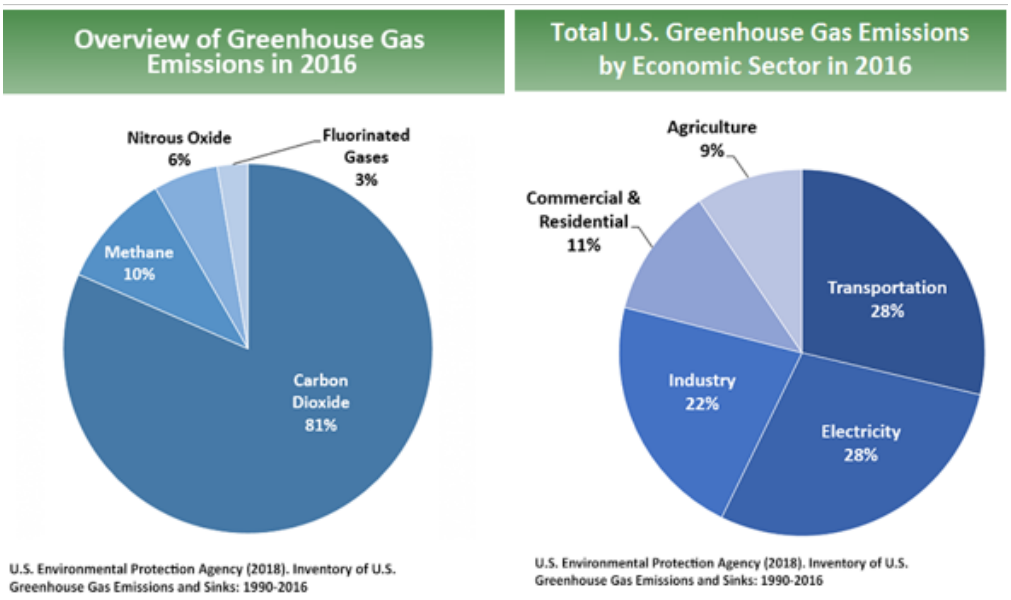

Figure 3-1. U.S. 2016 Greenhouse Gas Emissions

National GHG Inventory

The USEPA prepares a national GHG inventory every year and submits it to the United Nations in accordance with the Framework Convention on Climate Change. The inventory provides a comprehensive accounting of all human-produced sources of GHGs in the United States, reporting emissions of CO_2, CH_4, N_2O, HFCs, perfluorocarbons, SF_6, and nitrogen trifluoride. It also accounts for emissions of CO_2 that are removed from the atmosphere by "sinks" such as forests, vegetation, and soils that uptake and store CO_2 (carbon sequestration). The 1990–2016 inventory found that of 6,511 $MMTCO_2e$ GHG emissions in 2016, 81 percent consist of CO_2, 10 percent are CH_4, and 6 percent are N_2O; the balance consists of fluorinated gases (USEPA 2018). In 2016, GHG emissions from the transportation sector accounted for nearly 28.5 percent of U.S. GHG emissions.

State GHG Inventory

ARB collects GHG emissions data for transportation, electricity, commercial/residential, industrial, agricultural, and waste management sectors each year. It then summarizes and highlights major annual changes and trends to demonstrate the state's progress in meeting its GHG reduction goals (Figure 3-2). The 2019 edition of the GHG emissions inventory found total California emissions of 424.1 $MMTCO_2e$ for 2017, with the transportation sector responsible for 41 percent of total GHGs. It also found that overall statewide GHG emissions declined from 2000 to 2017 despite growth in population and state economic output (ARB 2019a) (Figure 3-3).

AB 32 required ARB to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing GHG emissions to 1990 levels by 2020, and to update it every 5 years. ARB adopted the first scoping plan in 2008. The second updated plan, *California's 2017 Climate Change Scoping Plan*, adopted on December 14, 2017, reflects the 2030 target

established in EO B-30-15 and SB 32. The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce GHG emissions.

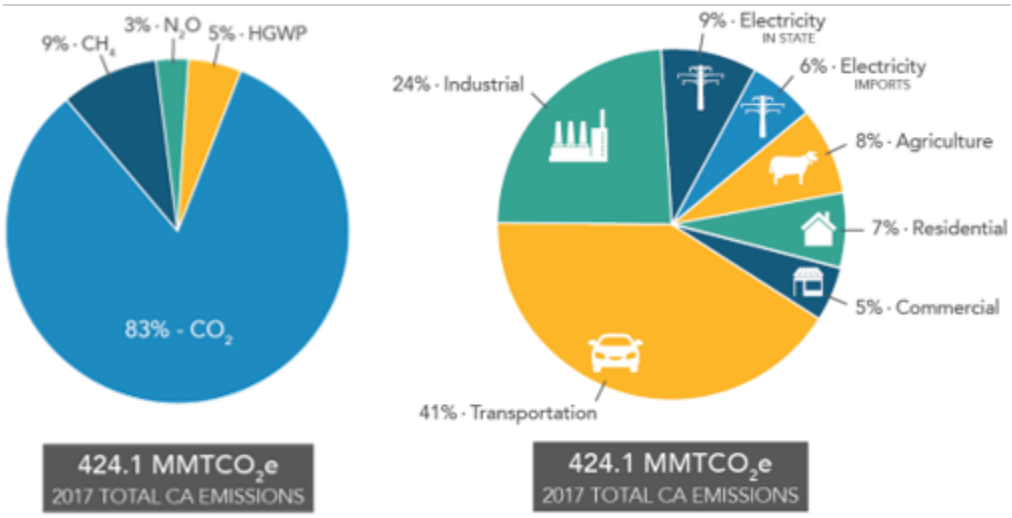

Figure 3-2. California 2017 Greenhouse Gas Emissions

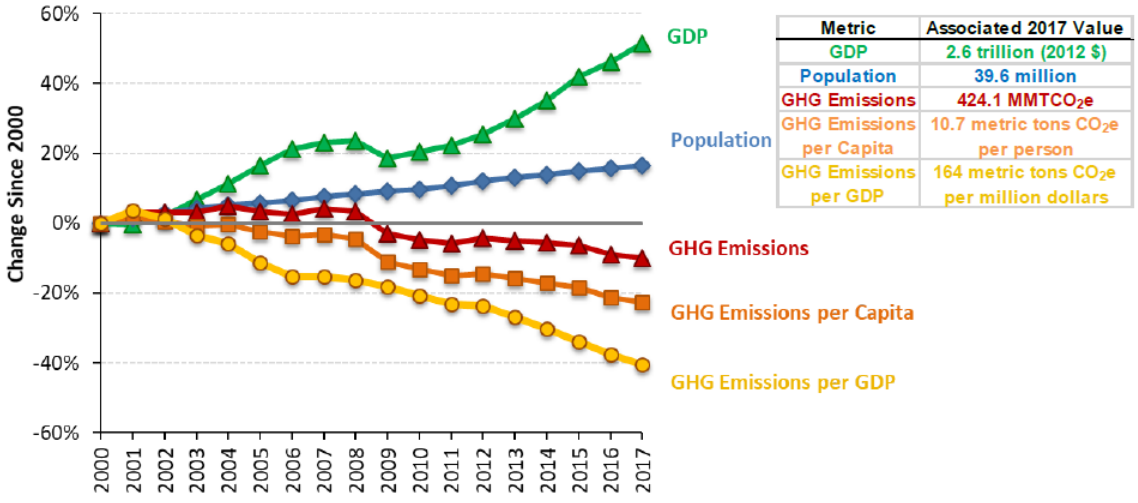

Figure 3-3. Change in California GDP, Population, and GHG Emissions since 2000

(Source: ARB 2019b)

Regional Plans

Humboldt County has prepared several plans that guide its strategy for GHG reduction and adaptation to global climate change. *The General Plan Update Draft Climate Action Plan* (Humboldt County 2012), the *Humboldt County Regional Transportation Plan* (HCAOG 2008), and the County's VROOM - *Variety in Rural Options of Mobility Semi-Final Draft 20-year Regional Transportation Plan* (HCAOG 2017a).

Goals and policies for the reduction of GHGs and strategies for adapting to global climate change in these plans include those listed below.

General Plan Update Draft Climate Action Plan

Air Quality Element

- **AQ-P10. County Government Greenhouse Gas Emission Reductions.** To lead by example, the County of Humboldt shall reduce GHG emissions from governmental operations consistent with the state Global Warming Solutions Act and subsequent implementing legislation.

Circulation Element

Bicycle and Pedestrian Travel

- **C-P-24. Investment in Improvements.** Humboldt County's Capital Improvement Plan shall include an assessment of the needs of bicycles and pedestrians and allocate funds consistent with the goal of increasing the safety, functional network and facility efficiency, and capacity of pedestrian and bike routes. The level of service and quality of service for pedestrians and bicycles shall not be diminished, and where practical, shall be increased, when expanding roadway capacity for motorized circulation. Road resurfacing projects should provide improved access and safety for bicycles.

- **C-P27. Right of Way Design Standards.** Right of way design standards shall incorporate specifications for bicycles, pedestrians, public transit facilities, and buffers.

The following measures are proposed for implementation of Humboldt County's Climate Action Plan:

Air Quality Element

- **AQ-IM3. Countywide Climate Action Plan.** Through its association with the Redwood Coast Energy Authority, the County shall participate in the development and implementation of a multi-jurisdictional Climate Action Plan that effectively mitigates the carbon emissions attributable to this Plan, consistent with the requirements of the state Global Warming Solutions Act and subsequent implementing legislations and regulations.

- **AQ-IM4. County Government GHG Emission Reductions.** Humboldt County shall prepare a Climate Action Plan for its governmental operations consistent with the Countywide Climate Action Plan that seeks emissions reductions in the following areas:

    A. Energy Efficiency and Conservation

    B. Green Building

    C. Waste Reduction and Recycling

    D. Climate-Friendly Purchasing

    E. Renewable Energy and Low-Carbon Fuels

    F. Efficient Transportation

    G. Offsetting Carbon Emissions

    H. Promoting Community and Individual Action

- **AQ-IM5. GHG Emissions.** Update the General Plan and Land Use Ordinances as appropriate to reflect the adopted countywide Climate Action Plan and new state laws and regulations for GHG emissions when they become available.

Circulation Element

The circulation element identifies the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, airports, ports and other local public utilities and facilities. The following GHG reduction strategies were incorporated into the circulation element:

- Promote linkages between development locations and transportation facilities.
- Identify and prioritize infrastructure improvements needed to support reductions in VMT.
- Support public transit service.
- Coordinate with adjacent jurisdictions and the regional transportation planning agency to develop mutual policies and funding mechanisms to increase the use of alternative transportation.

Regional Transportation Plan

The RTP describes the County's compliance with guidelines established by the California Transportation Commission at the time it was prepared (HCAOG 2008), and later amended (HCAOG 2014). The discussion of air quality/GHG compliance is focused on non-motorized transportation (bicycles and pedestrian traffic) and public transit systems. There are no goals or policies specific to the to the project proposed in this DEIR/EA. However, objectives and policies included in County's VROOM - *Variety in Rural Options of Mobility Semi-Final Draft 20-year*

Regional Transportation Plan (2017) provide for the proactive, collaborative, and adaptive transportation planning associated with global climate change and the role fossil-fuel-based transportation plays.

VROOM

GOAL: Reduce GHG emissions contributed by transportation while building and maintaining a transportation system that is truly multimodal and equitable.

GOAL: Minimize the negative health, social, economic, and environmental impacts caused by global climate change and sea-level rise.

- **Objective: Efficient & Viable Transportation System.** Reduce VMT and lower GHG emissions.

PROJECT ANALYSIS

GHG emissions from transportation projects can be divided into those produced during operation of the State Highway System and those produced during construction. The primary GHGs produced by the transportation sector are CO_2, CH_4, N_2O, and HFCs. CO_2 emissions are a product of the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of CH_4 and N_2O are emitted during fuel combustion. In addition, a small amount of HFC emissions are included in the transportation sector.

The CEQA Guidelines generally address greenhouse gas emissions as a cumulative impact due to the global nature of climate change (Pub. Resources Code, § 21083(b)(2)). As the California Supreme Court explained, “because of the global scale of climate change, any one project's contribution is unlikely to be significant by itself.” (Cleveland National Forest Foundation *v.* San Diego Assn. of Governments (2017) 3 Cal.5th 497, 512.) In assessing cumulative impacts, it must be determined if a project’s incremental effect is “cumulatively considerable” (CEQA Guidelines Sections 15064(h)(1) and 15130).

To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. Although climate change is ultimately a cumulative impact, not every individual project that emits greenhouse gases must necessarily be found to contribute to a significant cumulative impact on the environment.

Operational Emissions

The project is needed to improve safety and meet modern standards. The new bridge would reduce waiting times by adding a second travel lane and would allow heavy equipment and large loads to cross. The project would not increase capacity or induce growth; therefore, there would be no operational GHG emissions resulting from the project.

Construction Emissions

Construction GHG emissions would result from material processing, on-site construction equipment, and traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

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

The project would take two summer seasons to construct and would result in temporary construction emissions from worker vehicles, machines, and equipment. These emissions would, however, be short-term and would not result in long-term adverse effects. In addition, the project would comply with Caltrans Standard Specifications and all ARB and Air District rules, ordinances, and regulations. This would further reduce GHG emissions production during construction.

During construction, small amounts of GHG emissions would be produced; however, the project would not result in operational GHG emissions. The current regulatory or scientific information related to GHG emissions and CEQA significance would only lead to a speculative climate change determination of CEQA significance this project. AMM GHG-1 described below will be used to reduce GHG emissions and potential climate change impacts generated by project implementation.

All construction contracts include Caltrans Standard Specifications Section 7-1.02A and 7-1.02C, Emissions Reduction, which require contractors to comply with all laws applicable to the project and to certify they are aware of and will comply with all ARB emission reduction regulations; and Section 14-9.02, Air Pollution Control, which requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions.

CEQA Conclusion

While the project will result in GHG emissions during construction, it is anticipated that the project will not result in any increase in operational GHG emissions. The project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. With implementation of construction GHG-reduction measures, the impact would be less than significant.

3.3.2. GREENHOUSE GAS REDUCTION STRATEGIES

STATEWIDE EFFORTS

Major sectors of the California economy, including transportation, will need to reduce emissions to meet the 2030 and 2050 GHG emissions targets. Former Governor Edmund G. Brown promoted GHG reduction goals that involved (1) reducing today's petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farms and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy, *Safeguarding California* (Figure 3-4).

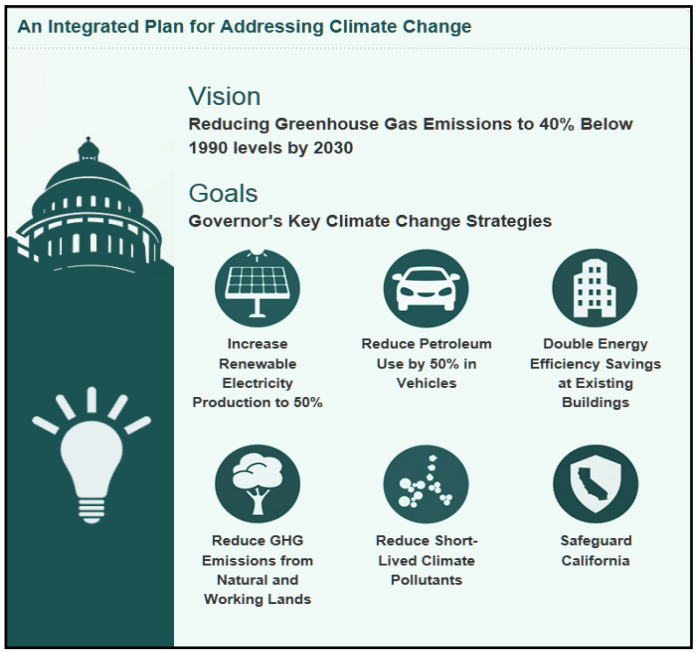

Figure 3-4. California Climate Strategy

The transportation sector is integral to the people and economy of California. To achieve GHG emission reduction goals, it is vital that the state build on past successes in reducing criteria and toxic air pollutants from transportation and goods movement. GHG emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of VMT. A key state goal for reducing GHG emissions is to reduce today's petroleum use in cars and trucks by up to 50 percent by 2030 (State of California 2019).

In addition, SB 1386 (2016) established as state policy the protection and management of natural and working lands and requires state agencies to consider that policy in their own decision making. Trees and vegetation on forests, rangelands, farms, and wetlands remove CO_2 from the atmosphere through biological processes and sequester the carbon in above- and below-ground matter.

CALTRANS ACTIVITIES

Caltrans continues to be involved on the Governor's Climate Action Team as the ARB works to implement EOs S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. EO B-30-15, issued in April 2015, and SB 32 (2016), set an interim target to cut GHG emissions to 40 percent below 1990 levels by 2030. The following major initiatives are underway at Caltrans to help meet these targets.

California Transportation Plan (CTP 2040)

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. In 2016, Caltrans completed the *California Transportation Plan 2040*, which establishes a new model for developing ground transportation systems, consistent with CO_2 reduction goals. It serves as an umbrella document for all the other statewide transportation planning documents. Over the next 25 years, California will be working to improve transit and reduce long-run repair and maintenance costs of roadways and developing a comprehensive assessment of climate-related TDM and new technologies rather than continuing to expand capacity on existing roadways.

SB 391 (2009) requires the CTP to meet California's climate change goals under AB 32. Accordingly, the CTP 2040 identifies the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the state's transportation needs. While Metropolitan Planning Organizations have primary responsibility for identifying land use patterns to help reduce GHG emissions, CTP 2040 identifies additional strategies in Pricing, Transportation Alternatives, Mode Shift, and Operational Efficiency.

Caltrans Strategic Management Plan

The Strategic Management Plan, released in 2015, creates a performance-based framework to preserve the environment and reduce GHG emissions, among other goals. Specific performance targets in the plan that will help to reduce GHG emissions include the following:

- Increasing percentage of non-auto mode share
- Reducing VMT
- Reducing Caltrans' internal operational (buildings, facilities, and fuel) GHG emissions

Funding and Technical Assistance Programs

In addition to developing plans and performance targets to reduce GHG emissions, Caltrans also administers several sustainable transportation planning grants. These grants encourage local and regional multimodal transportation, housing, and land use planning that furthers the region's RTP/SCS; contribute to the State's GHG reduction targets and advance transportation-related GHG emission reduction project types/strategies; and support other climate adaptation goals (e.g., *Safeguarding California*).

Caltrans Policy Directives and Other Initiatives

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities. *Caltrans Activities to Address Climate Change* (April 2013) provides a comprehensive overview of Caltrans' statewide activities to reduce GHG emissions resulting from agency operations.

PROJECT-LEVEL GREENHOUSE GAS REDUCTION STRATEGIES

The following measures will also be implemented in the project to reduce GHG emissions and potential climate change impacts from the project.

- **AMM GHG-1.**
    - The project shall comply with Caltrans Standard Specifications Section 14-8 regarding air quality.
    - In accordance with Caltrans Standard Specifications, the contractor shall comply with all Air District rules, ordinances, and regulations regarding air quality restrictions.
    - The project shall comply with Title 13 CCR 2485 which restricts construction vehicles idling to no longer than 5 consecutive minutes.

ADAPTATION

Reducing GHG emissions is only one part of an approach to addressing climate change. Caltrans must plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and in the frequency and intensity of wildfires. Flooding and erosion can damage or wash out roads; longer periods of intense heat can buckle pavement and railroad tracks; storm surges combined with a rising sea level can inundate highways. Wildfire can directly burn facilities and indirectly cause damage when rain falls on denuded slopes that landslide after a fire. Effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. Accordingly, Caltrans must consider these types of climate stressors in how highways are planned, designed, built, operated, and maintained.

FEDERAL EFFORTS

Under NEPA assignment, Caltrans is obligated to comply with all applicable federal environmental laws and FHWA NEPA regulations, policies, and guidance.

The U.S. Global Change Research Program delivers a report to Congress and the president every 4 years, in accordance with the Global Change Research Act of 1990 (15 USC ch. 56A § 2921 et seq). The *Fourth National Climate Assessment*, published in 2018, (U.S. Global Change

Research Program 2018) presents the foundational science and the "human welfare, societal, and environmental elements of climate change and variability for 10 regions and 18 national topics, with particular attention paid to observed and projected risks, impacts, consideration of risk reduction, and implications under different mitigation pathways." Chapter 12, "Transportation," presents a key discussion of vulnerability assessments. It notes that "asset owners and operators have increasingly conducted more focused studies of particular assets that consider multiple climate hazards and scenarios in the context of asset-specific information, such as design lifetime."

The USDOT Policy Statement on Climate Adaptation in June 2011 committed USDOT to "integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of DOT in order to ensure that taxpayer resources are invested wisely, and that transportation infrastructure, services and operations remain effective in current and future climate conditions" (USDOT 2011).

FHWA order 5520 (*Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events,* December 15, 2014) established FHWA policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. FHWA has developed guidance and tools for transportation planning that foster resilience to climate effects and sustainability at the federal, state, and local levels (FHWA 2019).

STATE EFFORTS

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system. *California's Fourth Climate Change Assessment* (2018) is the state's effort to "translate the state of climate science into useful information for action" in a variety of sectors at both statewide and local scales. It adopts the following key terms used widely in climate change analysis and policy documents:

- *Adaptation* to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.

- *Adaptive capacity* is the "combination of the strengths, attributes, and resources available to an individual, community, society, or organization that can be used to prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities."

- *Exposure* is the presence of people, infrastructure, natural systems, and economic, cultural, and social resources in areas that are subject to harm.

- *Resilience* is the "capacity of any entity - an individual, a community, an organization, or a natural system - to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience." Adaptation actions contribute to increasing resilience, which is a desired outcome or state of being.

- *Sensitivity* is the level to which a species, natural system, or community, government, etc., would be affected by changing climate conditions.

- *Vulnerability* is the "susceptibility to harm from exposure to stresses associated with environmental and social change and from the absence of capacity to adapt." Vulnerability can increase because of physical (built and environmental), social, political, and/or economic factor(s). These factors include, but are not limited to ethnicity, class, sexual orientation and identification, national origin, and income inequality. Vulnerability is often defined as the combination of sensitivity and adaptive capacity as affected by the level of exposure to changing climate.

Several key state policies have guided climate change adaptation efforts to date. Recent state publications produced in response to these policies draw on these definitions.

EO S-13-08, issued by then-governor Arnold Schwarzenegger in November 2008, focused on sea-level rise and resulted in the *California Climate Adaptation Strategy* (2009), updated in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan). The Safeguarding California Plan offers policy principles and recommendations and continues to be revised and augmented with sector-specific adaptation strategies, ongoing actions, and next steps for agencies.

EO S-13-08 also led to the publication of a series of sea-level rise assessment reports and associated guidance and policies. These reports formed the foundation of an interim *State of California Sea-Level Rise Interim Guidance Document* in 2010, with instructions for how state agencies could incorporate "sea-level rise projections into planning and decision making for projects in California" in a consistent way across agencies. The guidance was revised and augmented in 2013. *Rising Seas in California - An Update on Sea-Level Rise Science* was published in 2017 and its updated projections of sea-level rise and new understanding of processes and potential impacts in California were incorporated into the *State of California Sea-Level Rise Guidance Update* in 2018.

EO B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This EO recognizes that effects of climate change other than sea-level rise also threaten California's infrastructure. At the direction of EO B-30-15, the Office of Planning and Research published *Planning and Investing for a Resilient California: A Guidebook for State Agencies* in 2017, to encourage a uniform and systematic approach. Representatives of Caltrans participated in the multi-agency, multidisciplinary technical advisory group that developed this guidance on how to integrate climate change into planning and investment.

AB 2800 (2016) created the multidisciplinary Climate-Safe Infrastructure Working Group, which in 2018 released its report, *Paying it Forward: The Path Toward Climate-Safe Infrastructure in California*. The report provides guidance to agencies on how to address the challenges of assessing risk in the face of inherent uncertainties still posed by the best available science on climate change. It also examines how state agencies can use infrastructure planning, design, and implementation processes to address the observed and anticipated climate change impacts.

CALTRANS ADAPTATION EFFORTS

Caltrans Vulnerability Assessments

Caltrans is conducting climate change vulnerability assessments to identify segments of the State Highway System vulnerable to climate change effects including precipitation, temperature, wildfire, storm surge, and sea-level rise. The approach to the vulnerability assessments was tailored to the practices of a transportation agency, and involves the following concepts and actions:

- *Exposure* - Identify Caltrans assets exposed to damage or reduced service life from expected future conditions.
- *Consequence* - Determine what might occur to system assets in terms of loss of use or costs of repair.
- *Prioritization* - Develop a method for making capital programming decisions to address identified risks, including considerations of system use and/or timing of expected exposure.

The climate change data in the assessments were developed in coordination with climate change scientists and experts at federal, state, and regional organizations at the forefront of climate science. The findings of the vulnerability assessments will guide analysis of at-risk assets and development of adaptation plans to reduce the likelihood of damage to the State Highway System, allowing Caltrans to both reduce the costs of storm damage and to provide and maintain transportation that meets the needs of all Californians.

PROJECT ADAPTATION ANALYSIS

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its incremental change in emissions when combined with the contributions of all other sources of GHG.

Construction GHG emissions would result from material processing, on-site construction equipment, and traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

The project would take two summer seasons to construct and would result in temporary construction emissions from worker vehicles, machines, and equipment. These emissions would, however, be short-term and would not result in long-term adverse impacts. In addition, the project would comply with Caltrans Standard Specifications and all ARB and Air District

rules, ordinances, and regulations. This would further reduce GHG emissions production during construction.

The project is needed to improve safety and meet modern standards. The new bridge would reduce waiting times by adding a second travel lane and would allow heavy equipment and large loads to cross. The project would not increase capacity or induce growth; therefore, there would be no operational GHG emissions resulting from the project.

During construction, small amounts of GHG emissions would be produced; however, the project would not result in operational GHG emissions. The current regulatory or scientific information related to GHG emissions and CEQA significance would only lead to a speculative climate change determination of CEQA significance this project. AMM GHG-1 described in the Project-Level GHG Reduction Strategies section above will be used to reduce GHG emissions and potential climate change impacts generated by project implementation.

Sea-Level Rise

The project is outside the coastal zone and not in an area subject to sea-level rise (Caltrans 2019). Accordingly, direct impacts on transportation facilities due to projected sea-level rise are not expected.

Floodplains

Over the expected life of the proposed bridge, it is reasonable to expect the channel to have deepening or incision to an elevation of 292 feet, a depth of 12 feet below the existing bottom of channel. The maximum potential pier scour over the expected life of the replacement bridge is associated with full development of physical channel degradation. The preferred bridge would not constitute a significant contraction of the flood channel and is not expected to aggravate channel instability (Pacific Hydrologic 2020).

The preferred bridge would be within a reach of channel that does not have flood risk mapped by FEMA. As such, projects may encroach into the floodplain to the extent they result in a 1.0-foot increase in the water surface elevation of the most probable 100-year flood provided the increase does not result in an increased risk of damage to structures or other negative impacts. Abutments of the preferred bridge will not redirect significant volumes of water from the floodplain to the channel during the most probable 100-year flood. The project hydraulic study (Pacific Hydrologic 2020) determined that the preferred bridge is expected to result in a 0.11-foot increase in water surface elevation during the most probable 100-year flood immediately upstream of the bridge, tapering to a 0.02-foot increase at a location approximately 3,000 feet upstream of the bridge. No structures would be affected by this increase; therefore, the minor increase in water surface elevation during the most probable 100-year flood does not reflect an increase in the risk of damage to structures.

The proposed bridge structure will be built with added safety factors during design so that potential vulnerabilities associated with climate change, such as rising water levels may not be realized. The Honeydew Bridge is not in a coastal zone area so it would not be directly affected by rising sea levels and storm surge effects. The Mattole River floodplain in the project area is

anticipated to be adequate to accommodate increased water volumes during the life of the new Honeydew Bridge (anticipated to have a life of at least 50 years).

Wildfire

According to the CAL FIRE map of Humboldt County Fire Hazard Severity Zones in State Responsibility Area (CAL FIRE 2021), the immediate project area in along the Mattole River channel is identified as a moderate severity zone surrounded by a high severity zone outside the main river channel. Caltrans' assessment of future conditions using climate data indicates that an expanded set of future risks, from increased extreme precipitation to higher temperatures and an increase in wildfires, will be a concern throughout Humboldt County (Caltrans 2019).

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Chapter 4. Comments and Coordination

4.1. Introduction

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and to identify potential impacts and avoidance, minimization, and/or mitigation measures and related environmental requirements. Agency and tribal consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including interagency coordination meetings, public scoping meetings, and outreach to local tribes.

This chapter summarizes the results of the County's efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

4.2. Scoping Process

4.2.1. NOTICE OF PREPARATION

A Notice of Preparation (NOP) (SCH #:2017022027) was submitted to the California State Clearinghouse on February 9, 2017 (Appendix G). The following agencies were sent a copy of the NOP:

- California Department of Boating and Waterways
- CDFW - Region 1e
- CAL FIRE
- California Department of Parks and Recreation
- Caltrans - District 1
- California Department of Water Resources
- California Highway Patrol
- Regional Board - Region 1
- NAHC
- California Governor's Office of Emergency Services
- SHPO
- SLC

This notice started the 30-day scoping process, which ran from February 9, 2017 to March 10, 2017. The NOP was also posted on the County's website.

4.2.2. SCOPING MEETING

Two public scoping meetings were held for the project. The first informational public meeting was held on January 23, 2013 at the Honeydew Elementary School. Approximately 20 people attended the meeting. One written correspondence was received from the public stating a preference for Alternative 1 and four telephone calls were subsequently received; the calls included an endorsement for the project, concerns that the crossing would be relocated,

concerns that a new lane addition would encourage speeding, and concerns over an old oak tree at the bridge abutment.

A second public scoping meeting was held at the Mattole Grange No. 569 on March 1, 2017. It was a presentation style meeting attended by Caltrans, Morrison Structures, and Stantec (formerly North State Resources) environmental consultants. Key environmental issues, the CEQA/NEPA process, and project alternatives were presented using posters and handouts, and public concerns were discussed. A total of five members of the public attended the meeting.

Humboldt County Public Works Department received 14 written comments. The comments came from 2 regulatory agencies and 12 members of the public. In addition, CDFW and CAL FIRE submitted their comments via email. Comments received during scoping process included the following topics:

- Not replacing the existing bridge
- Choosing Alternative #1 the Steel Truss Design
- Choosing the seismically safest option
- Naming the bridge after a well-known resident
- Proving access for fire vehicles during construction
- Assessing impacts on bats, willow flycatcher, foothill yellow-legged frog, and coho salmon.
- Protecting western pond turtle during construction

4.3. Consultation and Coordination with Public Agencies

Consultation with several agencies occurred during the environmental review process. The following federal, state, regional, and local agencies were consulted in preparation of the DEIR/EA and its supporting technical reports (Table 4-1).

Table 4-1. Agency Coordination Meetings and Contacts

Organization	Date	Topic
National Marine Fisheries Service	May 2, 2017	Interagency Field Review Meeting
	May 30, 2018	Informal Section 7 Consultation
	June 15, 2018	Hydroacoustics assessment methods for pile-driving impacts
	October 16, 2020	A Biological Opinion issued by NMFS concurred with the Biological Assessment/Essential Fish Habitat that the project would adversely affect the essential fish habitat of Pacific Coast salmon.
U.S. Army Corps of Engineers	May 2, 2017	Interagency Field Review Meeting
North Coast Regional Water Quality Control Board	May 2, 2017	Interagency Field Review Meeting
California Department of Transportation	May 2, 2017	Interagency Field Review Meeting

Organization	Date	Topic
California Department of Fish and Wildlife	May 2, 2017	Interagency Field Review Meeting
State Office of Historic Preservation	January 23, 2014	Determination of Eligibility for National Register of Historic Places
	November 16, 2017	Finding of Adverse Effect under 36 Code of Federal Regulations 800.5(a)(1)
	January 18, 2019	Memorandum of Agreement between the California Department of Transportation and the State Historic Preservation Officer
Humboldt County Public Works Department	May 2, 2017	Interagency Field Review Meeting

4.3.1. NATIONAL MARINE FISHERIES SERVICE

NMFS is a division of the National Oceanic and Atmospheric Administration that regulates marine and anadromous fishery resources. The project has the potential to adversely affect federally listed anadromous fish species including the SONCC ESU coho salmon, California Coastal ESU Chinook salmon, and NC DPS steelhead. Pursuant to Section 7 of the ESA, NMFS issued its biological opinion (No. WCRO-2020-02509) on October 16, 2020, concluding that the project, as proposed, is not likely to jeopardize the continued existence of the CC Chinook salmon ESU or the NC steelhead DPS. The project is also not likely to destroy or adversely modify designated critical habitat for the Chinook salmon ESU or the steelhead DPS. NMFS expects the project would result in incidental take of steelhead and Chinook salmon, however, it does not expect the project to result in adverse impacts on individual SONCC coho salmon or their critical habitat. NMFS included an incidental take statement in the enclosed biological opinion. The incidental take statement included non-discretionary reasonable and prudent measures and terms and conditions that are expected to further reduce anticipated incidental take of Chinook salmon and steelhead. The biological opinion is provided in Appendix F.

Caltrans coordination with NMFS has included an initial site visit and assessment, discussions regarding mitigation and assessment methods, and informal consultations regarding project alternatives and considerations. NMFS participated in the initial interagency field review to discuss project alternatives and considerations.

4.3.2. U.S. ARMY CORPS OF ENGINEERS

USACE regulates waters of the United States under Section 404 of the CWA and Section 10 of the Rivers and Harbors Act). The project would include permanent and temporary impacts on water features as discussed in Section 2.3.2, Wetlands and Other Waters. The project will be subject to authorization under a Section 404 Nationwide Permit 14 (Linear Transportation Projects) issued by the San Francisco District of USACE.

USACE participated in the initial interagency field review to discuss project alternatives and considerations.

4.3.3. REGIONAL WATER QUALITY CONTROL BOARD

The Regional Board is broken down into a series of regional water quality control boards that aim to preserve and enhance the beneficial uses of the state's water resources. The Regional Board regulates water under Porter-Cologne Water Quality Control Act and has been delegated by the USEPA to regulate water in the state under Section 401 of the CWA. The County will obtain a 401 Water Quality Certification from the North Coast Regional Board.

The Regional Board participated in the initial interagency field review to discuss project alternatives and considerations.

4.3.4. CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

The CDFW regulates natural resources within the state of California. Sections 1600 to 1607 of the California Fish and Game Code contains regulations for alterations of stream and lake beds and banks. Because the project involves work in the Mattole River channel authorization under a Section 1602 Lake and Streambed Alternation Agreement Nationwide Permit 14 (Linear Transportation Projects) issued by CDFW before initiating work.

If a species is listed by both the FESA and the CESA, California Fish and Game Code Section 2080.1 allows an applicant who has obtained a federal incidental take statement (federal Section 7 consultation) to request that CDFW find the federal documents (i.e., NMFS Biological Opinion) consistent with CESA. If the federal documents are found to be consistent with CESA, a consistency determination will be issued, and no further authorization or approval is necessary under CESA.

The project also has the potential to affect several state-listed wildlife species as discussed in Section 2.3 Biological Resources. The County will initiate consultation with CDFW to determine appropriate AMMs or project-specific mitigation measure necessary to reduce impacts on special-status species.

CDFW participated in the initial interagency field review to discuss project alternatives and considerations, including fish passage and potential effects on special-status species in the project vicinity.

4.3.5. STATE HISTORIC PRESERVATION OFFICER

The Office of Historic Preservation (OHP) was established from the directive in the National Historic Preservation Act. The SHPO is responsible for the operation and management of the OHP and is appointed by the Governor. On a project level, SHPO issues concurrence determinations for properties that may be eligible for listing in the NRHP. Caltrans sent a request to SHPO for concurrence that the nearby Honeydew Country Store was not eligible for inclusion in the NRHP. On January 23, 2014 Caltrans received a letter from the OHP concurring that the Honeydew Country Store is not eligible for inclusion in the NRHP.

The Honeydew Bridge was determined eligible for listing in NRHP in 2003 as a result of the Caltrans Historic Bridge Inventory. Under Section 106 of the NHPA Caltrans reached out to

local historical groups for comments on the project. Caltrans sent letters to the Humboldt County Historical Society, Mattole Valley Historical Society, Clarke Historical Museum, and Eureka Heritage Society. Several email exchanges occurred with Laura Walker Cooskey of the Mattole Valley Historical Society regarding potential concerns over the bridge replacement. Because the bridge is listed as eligible for inclusion in the NRHP, the County and Caltrans prepared a Finding of Adverse Effect and MOA to consult with SHPO regarding the resolution of adverse effects.

An amended MOA between Caltrans and SHPO was issued on August 5, 2021 for changes to the project's APE (State of California – Natural Resources Agency 2021). Revisions to the APE became necessary to accommodate detour and work staging areas. The project description remained unchanged, and the APE revision solely involved relocating the proposed detour route and temporary bridge crossing to a location further downstream than what was originally proposed in the September 2013 map, which was used for the previous MOA. SHPO concurred with the new APE and amended MOA (Appendix A).

4.3.6. STATE LANDS COMMISSION

The State Lands Commission (SLC) is responsible for the protection, access, and management of approximately 4 million acres of tidal and submerged lands and the beds of navigable rivers, streams, lakes, bays, estuaries, inlets, and straits. The SLC also monitors sovereign land granted in trust by the California Legislature. The County will request a general lease permit from the SLC.

4.3.7. NATIVE AMERICAN CONSULTATION

The NAHC is appointed by the Governor and helps identify and catalog cultural resources in California. James Roscoe sent a letter to the NAHC on June 18, 2013 requesting a search of the Sacred Lands Inventory File and a current list of local Native American groups and individuals who may have interests and/or concerns with the project. The NAHC responded on June 18, 2013 and stated that their Native American cultural resources in the vicinity of the project areas and provided a list of Native American contacts in the area. Consultation letters were sent on June 27, 2013 to the Bear River Band of the Rohnerville Rancheria and the InterTribal Sinkyone Wilderness Council. Follow up phone calls were also made. The THPO for the Bear River Band of the Rohnerville Rancheria requested to accompany to the crew to the project area and subsequently participated in a field survey on June 27, 2013. A Supplemental Archaeological Survey Report (William Rich and Associates 2020) was approved by Caltrans on July 21, 2020. This supplemental report assessed the expanded project APE resulting from the revised project design. On June 19, 2020, a letter including the revised APE map was sent to representatives of the Bear River Band of the Rohnerville Rancheria and the InterTribal Sinkyone Wilderness Council. The letter notified these tribes of the updated field survey and requested information about the project area that would help to identify important cultural resources. No responses were received at the time the supplemental report was prepared on July 17, 2020, and none have been received to date.

4.4. Public Participation

4.4.1. NOTICE OF COMPLETION OF THE DRAFT ENVIRONMENTAL DOCUMENT

A Notice of Completion for the Draft EIR/EA was circulated on October 29, 2021, by the State Clearinghouse. The Draft EIR/EA and supporting technical studies were also posted on the County's project website (https://humboldtgov.org/2216/Honeydew-Bridge-Replacement). A list of the supporting technical studies is provided in Appendix H. A public notice was circulated in the local newspaper, the Eureka Times-Standard, on October 29, 2021 and November 15, 2021. Copies of the proof of Notification Advertisement in the Times-Standard are included in Appendix I. Notification was also sent via both email and postal mail to the project stakeholders (see Chapter 6.0, Distribution List). The notice provided information on the project, including a summary of the proposed project, summary of impacts and mitigation measures, where the environmental document could be reviewed, the address to where comments could be sent, and the close of the public comment period. The public comment period began on October 29, 2021 and ended on December 13, 2021. No comments were received from the reviewing agencies or public during this time (Appendix J, Comment Letters and Responses). A final summary of the proposed avoidance, minimization and mitigation summary is provided in Appendix K.

4.4.2. PUBLIC MEETING

In response to California's Executive Order N-33-20 relative to the avoidance of large gatherings to reduce the potential spread of Covid-19, the County and Caltrans held an online public meeting. The purpose of the public meeting was to provide an overview of the proposed Project, present the draft environmental document to the public, and provide direction on submitting written comments on the Draft EIR/EA. No in-person meetings were held during the 45-day public comment period. Attendees were invited to participate virtually via WebEx by accessing the Project website (https://deavpm.wixsite.com/honeydew); instructions were provided in the NOA. The virtual public meeting was held on November 16, 2021, from 5:00 P.M to 6:30 P.M. The project development team (Caltrans, County, and consultant team) and three members of the public were present at the meeting.

The virtual meeting was conducted using an open house format with PDFs of the following available for online viewing and downloading: general project information (location map, project team roles, information sheet, bridge deficiencies, preliminary design features, project schedule, project cost and funding); project alternatives and comparison table; construction methods (project layout, 30% design plans, staging, access, sequencing; detour, work pads and shoring tower, foundation system and dewatering activities, and bridge demolition); and environmental process (purpose and need, environmental timeline, summary of key impacts, and completed technical studies).

The meeting began with the project manager presenting an overview of the project followed by a comprehensive walk-through of the general project information, alternatives, construction methods, and environmental process modules. Instructions were provided on the various options for submitting comments on the DEIR/EA. Comment options included the use of an

online form available on the project's website, a link to download and submitting a provided comment form, or emailing or mailing comment letters to the County. A brief question and answer session followed the presentation, but no concerns were voiced by the meeting participants. No written comments were received during or subsequent to the public meeting

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Chapter 5. List of Preparers

The following Department staff and consultants contributed to the preparation of this Draft EIR/EA.

5.1. Humboldt County Public Works Department

Andrew Bundschuh	Environmental Permitting and Compliance Manager
Tony Seghetti, P.E.	Deputy Director, Engineering
Jeff Ball, P.E.	Associate Civil Engineer

5.2. California Department of Transportation

Haiyan Zhang	Senior Environmental Planner
Neil Peacock	Senior Environmental Planner
Christian Figueroa, P.G., C.E.G.	Hazardous Waste/Paleontology Coordinator
Julia Peterson	Associate Environmental Planner
Darrell Cardiff	Cultural Resources
Christa Unger	Environmental Planner
Phlora Barbash	Landscape Associate

5.3. Morrison Structures

Robert Morrison, S.E.	Project Engineer

5.4. Quincy Engineering, Inc.

Jim Foster, P.E.	Project Engineer

5.5. Stantec Environmental Consulting Inc.

Wirt Lanning	CEQA/NEPA Program Director, Principal, Senior Project Manager
Connie MacGregor	Environmental Analyst/Environmental Scientist
Brendan Cohen	Environmental Specialist
Keith Marine	Principal, Fisheries Biologist
David Pluth	Project Biologist
Sarah Tona	Associate Biologist
Teri Mooney	GIS Analyst
Sylvia Langford	Document Control

5.6. Curalium Consulting

Coral Cavanagh, AICP	Technical Editor

5.7. JRP Historical Consulting, LLC

Chris McMorris	Architectural Historian

5.8. Roscoe and Associates

James Roscoe	Archaeologist

5.9. William Rich and Associates

William Rich	Archaeologist

5.10. WRECO

Joyce Cheng, P.E.	Initial Site Assessment
Tony Evans	Initial Site Assessment
Jim Koniuto	Asbestos/Lead Inspection
Melissa McAssey	Preliminary Site Investigation
Andrew Smith	Preliminary Site Investigation

Chapter 6. Distribution List

The Draft EIR/EA was distributed to the following federal, state, and regional responsible and trustee agencies and elected officials. Agencies with an asterisk (*) will receive notification via the California State Clearinghouse.

In addition to the following list, local officials, stakeholders, community groups, businesses, and interested persons were notified of the availability of this document and public meetings as described in Chapter 4.0, Comments and Coordination. Furthermore, all property owners/occupants near the project area received a project mailer informing them of the availability of the Draft EIR/EA.

Table 6-1. Distribution List - Draft Environmental Impact Report/Environmental Assessment

Contact/Affiliation	Mailing Address/Email Address
California Department of Fish and Wildlife District 1 Northern Region*	601 Locust Street, Redding, CA 96001
Department of Toxic Substances Control Permitting Division*	1001 I Street/P.O. Box 806, Sacramento, CA 95812-0806 CEQAReview@dtsc.ca.gov
Native American Heritage Commission*	1550 Harbor Blvd, Suite 100, West Sacramento, CA 95691 nahc@nahc.ca.gov
Regional Water Quality Control Board District 1*	5550 Skylane Blvd., Suite A, Santa Rosa, CA 95403 NorthCoast@waterboards.ca.gov
California State Lands Commission Sacramento Office*	100 Howe Avenue, Suite 100 South, Sacramento CA 95825
State Office of Historic Preservation*	1725 23rd Street, Suite 100, Sacramento, CA 95816 calshpo.ohp@parks.ca.gov
Peter Marshall Grange	Box 47, Honeydew, CA 95545-0047
Ken W. Carpenter	Box 177, Honeydew, CA 95545
Laura Cooskey Mattole Valley Historical Society	P.O. Box 144, Petrolia, CA 95558 lauracooskey@frontiernet.net
Sonny Anders (Last name illegible)	Box 224, Petrolia, CA 95558
William Etter William J. Etter Construction	P.O. Box 61, Honeydew, CA 95545
Kris Schuster	39803 Mattole Road, Honeydew, CA 95545
Claire Trower	4062 Wilder Ridge Road, Garberville, CA 95542
Roxanne Kennedy & Jim Bowdoin	P.O. Box 153, Honeydew, CA 95545

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Chapter 7. References List

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