DRAFT

Initial Study and Mitigated Negative Declaration for the Live Oak Canal Bridge Replacement Project

Lead Agency

County of Sutter
1130 Civic Center Boulevard
Yuba City, California 95993

April 2023

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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Initial Study and Mitigated Negative Declaration

Live Oak Canal Bridge Replacement

Sutter County, California

Lead Agency:

County of Sutter
1130 Civic Center Blvd.
Yuba City, CA 95993

Prepared by:

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

2525 Warren Drive
Rocklin, CA 95677

April 2023

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DRAFT MITIGATED NEGATIVE DECLARATION

Lead Agency: County of Sutter

Project Location: The Project site is located at the intersection of Sanders Road and Larkin Road in eastern Sutter County, California.

Project Description: The County of Sutter (County) proposes the Live Oak Canal Bridge Replacement Project. The Proposed Project is located on the eastern edge of Sutter County, between Yuba City and Live Oak, just west of State Route (SR) 99. The Live Oak Canal Bridge (Bridge No. 18C0106) is located on Sanders Road at the intersection with Larkin Road. The County is proposing to replace the bridge due to low sufficiency rating and poor intersection geometry. The new structure would allow truck turning for California Legal Trucks to and from Larkin Road onto Sanders Road. The proposed bridge replacement is planned to be a precast or cast-in-place, reinforced concrete double-celled box culvert (box culvert) with overall (gross) dimensions of about 13.9 feet (ft) wide by 105.5 ft long. The Project is currently partially funded through SB 1 and local funds.

Public Review Period: **April 12, 2023 – May 12, 2023**

Mitigation Measures Incorporated into the Project to Avoid Significant Effects:

Air Quality

AQ-1: CARB Tier 4 Compliance

The Project applicant and/or its contractor shall require that all Project construction equipment shall be California Air Resources Board (CARB) Tier 4 Certified, as set forth in Section 2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 of the Code of Federal Regulations.

Biological Resources

BIO-1: Special-Status Plants Protocol

If initiation of construction does not occur within two years of the special-status plant survey (August 2022), the following measures shall be implemented:

- A qualified biologist shall perform floristic plant surveys according to USFWS, CDFW, and CNPS protocols prior to construction, timed according to the appropriate

phenological stage for identifying target species. Known reference populations shall be visited or local herbaria records shall be reviewed, if available, prior to surveys to confirm the phenological stage of the target species. If no special-status plants are found within the Project site, no further measures pertaining to special-status plants are necessary.

- If special-status plants are identified within 25 feet of the Project impact area, the following avoidance and mitigation measures shall be required:
  - If avoidance of special-status plants is feasible, establish and clearly demarcate avoidance zones for special-status plant occurrences prior to construction. Avoidance zones shall include the extent of the special-status plants plus a 25-foot buffer, unless otherwise determined by a qualified biologist, and shall be maintained until the completion of construction. A qualified biologist/biological monitor shall be present if work must occur within the avoidance buffer to ensure special-status plants are not impacted by the work.
  - If avoidance of special-status plants is not feasible, mitigate for significant impacts to special-status plants. The measures shall be developed in consultation with CDFW. The avoidance and mitigation measures may include permanent preservation of onsite or offsite habitat for special-status plants or translocation of plants or seeds from impacted areas to unaffected habitats.

BIO-2: Northwestern Pond Turtle Surveys

The following measures shall be implemented prior to initiation of Project construction:

- Preconstruction surveys shall be conducted within 48 hours prior to the start of construction.
- If no northwestern pond turtles are found, no further measures pertaining to this species are necessary.
- If northwestern pond turtles are found within an area proposed for impact, a qualified biologist shall relocate the animal to a suitable location away from the proposed work area, in consultation with CDFW.

BIO-3: Giant Garter Snake Protocol

The following measures shall be implemented prior to initiation of Project construction:

- Conduct an assessment for giant garter snake habitat as described in the Draft Recovery Plan for the Giant Garter Snake (USFWS 1999). If giant garter snake habitat is absent from the Study Area, and CDFW and USFWS concur with the assessment, no further measures pertaining to this species are necessary.
- If the Study Area supports giant garter snake habitat, Project-related impacts to that habitat shall be avoided, and avoidance measures shall be developed in consultation with USFWS and CDFW.

- If proposed impacts to giant garter snake habitat are unavoidable, minimization or avoidance measures shall be developed in consultation with USFWS and incidental take authorization obtained pursuant to the federal ESA Section 7 or Section 10. In addition, a CDFW Incidental Take Permit shall be obtained pursuant to California ESA Section 2081.

BIO-4: Nesting Birds Surveys

The following measures shall be implemented prior to ground-disturbing activities:

- A qualified biologist shall conduct a preconstruction survey for nesting raptors, within the Study Area and a 500-foot buffer, within 14 days of commencement of Project activities (can be conducted concurrently with nesting bird surveys, as appropriate). If an active nest is located, a no-disturbance buffer shall be established as determined by the biologist in consultation with CDFW and maintained until a qualified biologist determines the young have fledged and are no longer reliant upon the nest for survival.
- A qualified biologist shall conduct a preconstruction nesting bird (non-raptor) survey (can be conducted concurrently with raptor surveys, as appropriate) of all areas associated with construction activities, and a 100-foot buffer around these areas, within 14 days prior to commencement of construction. If active nests are found, a no-disturbance buffer around the nest shall be established. The buffer distance shall be established by a qualified biologist in consultation with the CDFW. The buffer shall be maintained until the fledglings are capable of flight and become independent of the nest, to be determined by a qualified biologist. Once the young are independent of the nest, no further measures are necessary.
- The construction contractor may knock down inactive nests (without eggs or fledglings) as determined by a qualified biologist.

BIO-5: Roosting Bats Surveys

The following measures shall be implemented prior to ground-disturbing activities:

- A qualified biologist shall survey for suitable roosting habitat within the Project impact limits prior to Project activities that may impact potential bat roosting habitat (e.g., removal of manmade structures or trees). If suitable roosting habitat is not identified, no further measures are necessary.
- If suitable roosting habitat is identified, a qualified biologist shall conduct an evening bat emergence survey that may include acoustic monitoring to determine whether or not bats are present within one week prior to construction. If roosting bats are determined to be present within the Study Area, consultation with CDFW prior to initiation of construction activities or preparation of a Bat Management Plan outlining avoidance and minimization measures specific to the potentially affected roost(s) may be required.

BIO-6: Waters of the U.S./State

The following measures shall be implemented prior to initiation of Project construction:

- Obtain verification of Waters of the U.S. from the USACE and/or Waters of the State from the Central Valley RWQCB.
- A permit authorization under Section 404 of the federal CWA (Section 404 Permit) must be obtained from USACE prior to discharging any dredged or fill materials into any Waters of the U.S. Final avoidance and mitigation measures will be developed as part of the Section 404 Permit process to ensure no-net-loss of wetland function and values.
- A permit authorization from the Central Valley RWQCB pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Act must be obtained prior to the discharge of material in an area that could affect Waters of the U.S./State. Mitigation requirements for discharge to Waters of the U.S./State will be developed in consultation with the Central Valley RWQCB.
- If necessary, a SAA from CDFW pursuant to Section 1602 of the California Fish and Game Code must be obtained for impacts to features (e.g., the bed, channel, or bank of any river, stream, or lake) that may be subject to Section 1600 of the Fish and Game Code. The construction contractor shall adhere to all conditions outlined in the Section 1602 SAA.

Cultural Resources

CUL-1: Unanticipated Discoveries

If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, the archaeologist shall immediately notify the lead agencies. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines or a historic property under Section 106 NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through

consultation as appropriate, determine that the site either: 1) is not a Historical Resource under CEQA or a Historic Property under Section 106; or 2) that the treatment measures have been completed to their satisfaction.

- If the find includes human remains, or remains that are potentially human, they shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Sutter County Coroner (per Section 7050.5 of the Health and Safety Code). The provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California PRC, and AB 2641 will be implemented. If the coroner determines the remains are Native American and not the result of a crime scene, the coroner will notify the Native American Heritage Commission (NAHC), which then will designate a Native American Most Likely Descendant (MLD) for the Project (Section 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (Section 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (Section 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

The lead agency is responsible for ensuring compliance with this mitigation measure. Section 15097 of Title 14, Chapter 3, Article 7 of CEQA, Mitigation Monitoring or Reporting, "The public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects. A public agency may delegate reporting or monitoring responsibilities to another public agency or to a private entity which accepts the delegation; however, until mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program."

Tribal Cultural Resources

TCR-1: Unanticipated Discoveries

If subsurface deposits are encountered which represent a Native American or potentially Native American resource that does not include human remains, all work shall cease within 100 feet of the find and the contractor shall immediately contact the County of Sutter and coordinate to contact a member of a culturally affiliated tribe. If the tribal representative determines the find is a TCR, the tribe and the County of Sutter shall consult on appropriate treatment measures. Preservation in place is the preferred treatment, if feasible. Work may

not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not a Tribal Cultural Resource or a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) that the treatment measures have been completed to their satisfaction. This Mitigation Measure shall be implemented in conjunction with Mitigation Measure CUL-1.

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Appendix E – CONFIDENTIAL Cultural Resources Inventory and Evaluation Report. ECORP Consulting, Inc. 2022.

Appendix F – Draft Foundation Report. Crawford & Associates, Inc. 2022.

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Appendix H – Noise Modeling. ECORP Consulting, Inc. 2022.

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LIST OF ACRONYMS AND ABBREVIATIONS

Term	Definition
˚F	Degrees Fahrenheit
AB	Assembly Bill
ACCM	Asbestos-Containing Construction Material
ACHP	Advisory Council on Historic Preservation
ADL	Aerially Deposited Lead
ADT	Average Daily Traffic
AMS	Alternative Management Standards
ANSI	American National Standards Institute
APE	Area of Potential Effect
ARD	Aquatic Resources Delineation
BA	Biological Assessment
BCC	Birds of Conservation Concern
BMPs	Best Management Practices
BO	Biological Opinion
BRA	Biological Resources Assessment
CAAQS	California Ambient Air Quality Standards
CAC	Certified Asbestos Consultant
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CBC	California Building Standards Code
CCR	Code of Regulations
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission

Term	Definition
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	Methane
CHP	California Highway Patrol
CIWM	California Integrated Waste Management
CNDDB	California Natural Diversity Database
CNEL	Community Noise Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CRHR	California Register of Historic Resources
CRPR	California Rare Plant Rank
CRS	California Road System
CSA	County Service Areas
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
DHS	Department of Health Services
DPM	Diesel Particulate Matter
DPR	Department of Parks and Recreation
DPS	Distinct Population Segment
DTSC	Department of Toxic Substances Control
EIR	Environmental Impact Report
EMFAC	Emission Factor Model
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FEIR	Final Environmental Impact Report
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
FRAQMD	Feather River Air Quality Management District
ft	Feet
FTA	Federal Transit Administration
GHG	Greenhouse Gas
GPS	Geographic Positioning System
HCP	Habitat Conservation Plan
IS	Initial Study
ISA	Initial Site Assessment
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendent
MND	Mitigated Negative Declaration
MRZ	Mineral Resource Zone
MSL	Mean Sea Level
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
ND	Negative Declaration

Term	Definition
NEIC	Northeast Information Center
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NIOSH	National Institute for Occupational Safety and Health
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
N_2O	Nitrous Oxide
NO_x	Nitrogen Oxides
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSVAB	Northern Sacramento Valley Air Basin
PG&E	Pacific Gas & Electric Company
PM	Particulate Matter
$PM_{2.5}$	Particulate matter with a diameter of 2.5 microns or less
PM_{10}	Particulate matter with a diameter of 10 microns or less
PRC	Public Resources Code
RCEM	Roadway Construction Emissions Model
RD	Reclamation District
ROG	Reactive Organic Gases
ROW	Right-of-Way
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Application
SB	Senate Bill
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SMARA	Surface Mining and Reclamation Act of 1975
SR	State Route
SSC	Species of Special Concern
SSP	Standard Special Provision
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TCRs	Tribal Cultural Resources
TWW	Treated Wood Waste
USACE	United States Army Corps of Engineers
UCMP	University of California Museum of Paleontology
USC	U.S. Code
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
VELB	Valley Elderberry Longhorn Beetle
WPA	Works Progress Administration

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1.0 BACKGROUND

1.1 Summary

Project Title:	Live Oak Canal Bridge Replacement
Lead Agency Name and Address:	County of Sutter Development Services Department 1130 Civic Center Boulevard Yuba City, CA 95993
Contact Person and Phone Number:	Scott Riddle, Senior Civil Engineer (530) 822-7400 ext. 307
Project Location:	Intersection of Sanders Road and Larkin Road in eastern Sutter County
General Plan Designation:	N/A (surrounded by AG-20)
Zoning:	N/A (surrounded by AG)

1.2 Introduction

The County of Sutter is the Lead Agency for this California Environmental Quality Act (CEQA) Initial Study. This Initial Study has been prepared to identify and assess the anticipated environmental impacts of the Live Oak Canal Bridge Replacement Project to satisfy CEQA (Public Resources Code [PRC], Section 21000 et seq.) and state CEQA Guidelines (Title 14, California Code of Regulations [CCR] 15000 et seq.). CEQA requires that all state and local government agencies consider the environmental consequences before approving those projects. The County of Sutter will use this CEQA Initial Study to determine which CEQA document is appropriate for the Project: Negative Declaration (ND), Mitigated Negative Declaration (MND), or Environmental Impact Report (EIR). If the agency finds no substantial evidence that the project or any of its aspects may cause a significant effect on the environment, a ND shall be prepared. If in the course of analysis, the agency recognizes that the Project may have a significant impact on the environment, but that by incorporating specific mitigation measures the impact will be reduced to a less than significant effect, a MND shall be prepared.

In accordance with CEQA, this Initial Study/Mitigated Negative Declaration (IS/MND) will be circulated for a 30-day public review and comment period. Written comments on the Draft IS/MND should be submitted via email (preferred) or mail to Scott Riddle, Senior Civil Engineer:

sriddle@co.sutter.ca.us

or

County of Sutter
Scott Riddle, Senior Civil Engineer
1130 Civic Center Boulevard
Yuba City, California 95993

2.0 PROJECT DESCRIPTION

2.1 Project Background and Objectives

The County of Sutter proposes the Live Oak Canal Bridge Replacement Project. The Proposed Project is located on the eastern edge of Sutter County, between Yuba City and Live Oak, just west of SR 99 (Figures 2-1 and 2-2). The Live Oak Canal Bridge (Bridge No. 18C0106) is located on Sanders Road at the intersection with Larkin Road. The County is proposing to replace the bridge due to low sufficiency rating and poor intersection geometry. The new structure would allow truck turning for California Legal Trucks to and from Larkin Road onto Sanders Road. The proposed bridge replacement is planned to be a precast or cast-in-place, reinforced concrete double-celled box culvert (box culvert) with overall (gross) dimensions of about 13.9 feet (ft) wide by 105.5 ft long. The Project is currently partially funded through SB 1 and local funds.

The Project proposes to keep the existing centerline of both Sanders Road and Larkin Road unchanged and shift Live Oak Canal approximately 8-9 ft to the west (Figure 2-3). Shifting the canal would allow for a shorter box culvert by pushing the intersection away from the canal crossing. This geometry would create wider shoulders. Rumble strips are proposed to keep vehicles within the active lane and to discourage cutting across the widened corners. The rumble strips would not hinder turning movements for small or large vehicles and would still allow trucks to make turning movements. At the edges of the roadway shoulders, a barrier fence or railing is proposed. Adding a barrier would channelize and keep vehicles on the roadway. To protect the barrier rails, end rail treatments would be required for traffic on Larkin Road.

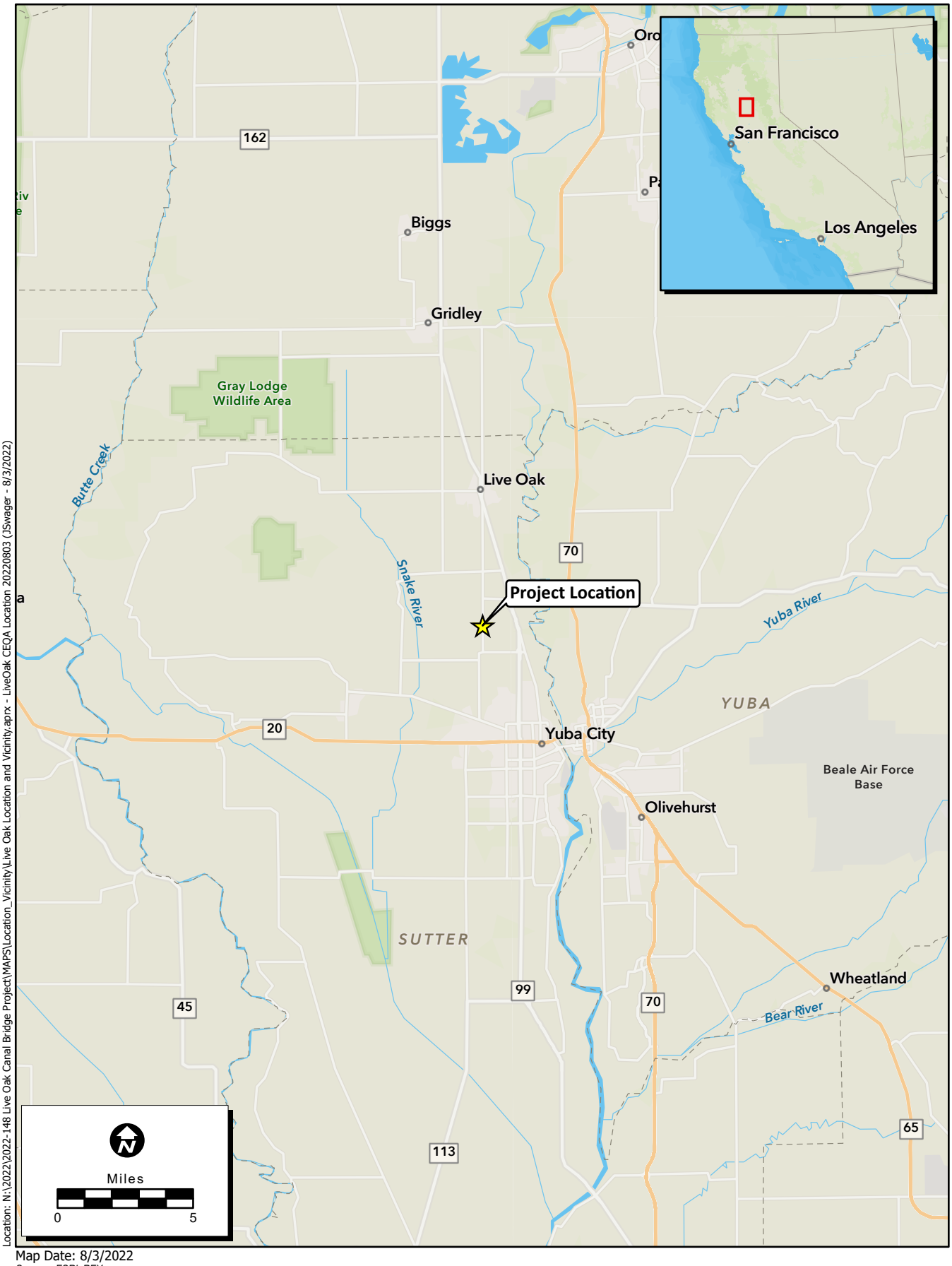
The Project may require additional right-of-way as it extends beyond the existing County roadway right-of-way. The additional right-of-way would facilitate canal realignment and provide Reclamation District (RD) 777, which owns and operates the canal, access along the top of the canal. Additional right-of-way would be required from the two properties west of Live Oak Canal.

2.2 Project Setting

2.2.1 Existing Infrastructure

2.2.1.1 Sanders Road and Larkin Road

Sanders Road is classified as a Local Road per the California Department of Transportation (Caltrans) California Road System (CRS) Maps and Larkin Road is classified as a Major Collector. Sanders Road is a two-lane asphalt road that is approximately 18 feet wide with graded shoulders on both sides. Larkin Road is also a two-lane asphalt road having a total width of approximately 20 feet with graded shoulders on both sides.



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Map Date: 8/3/2022

Sources: ESRI, REY

Figure 2-1. Project Location

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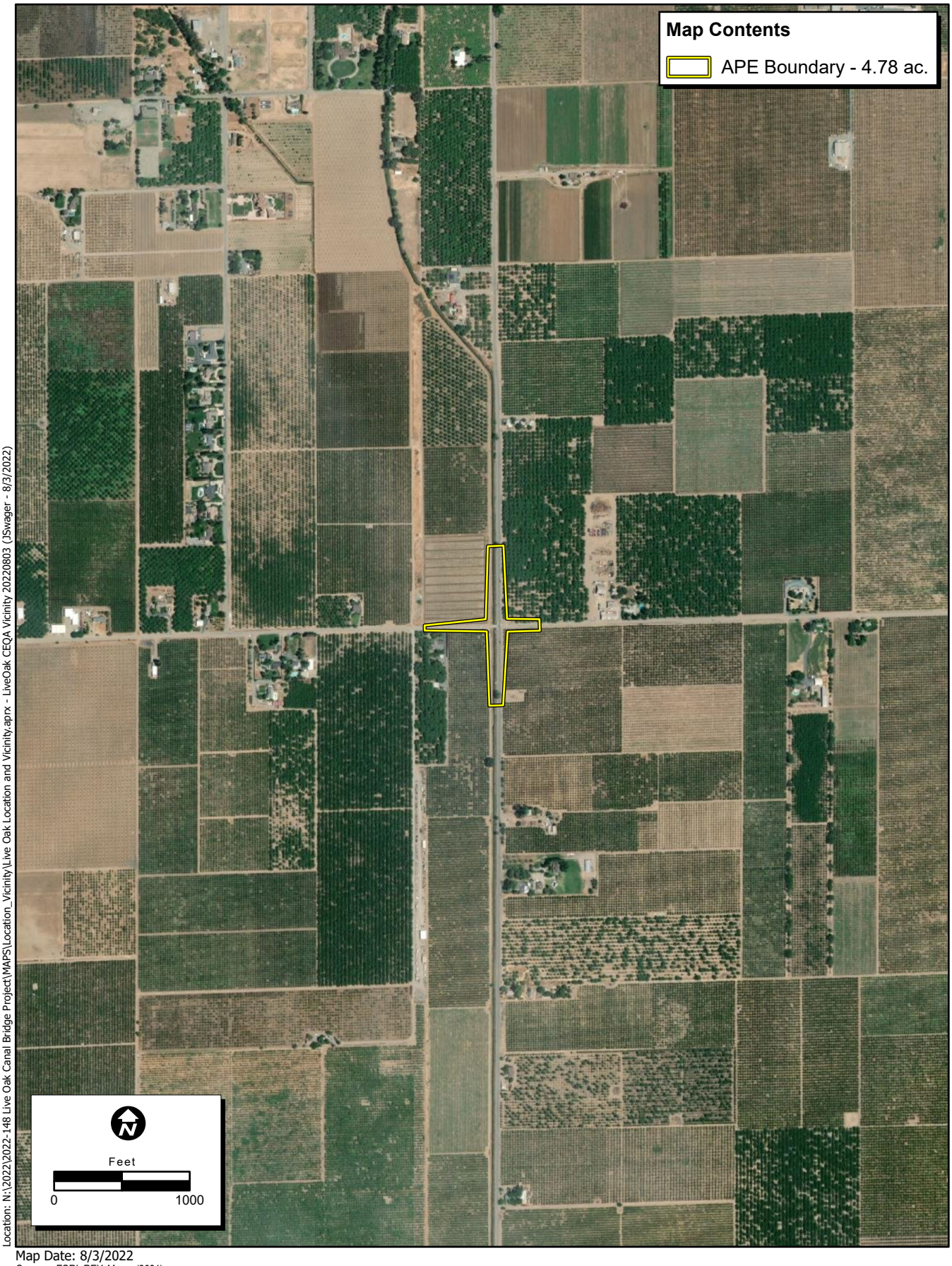
2022-148 Live Oak Canal Bridge Replacement



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Map Date: 8/3/2022

Sources: ESRI, REY, Maxar (2021)

Figure 2-2. Project Vicinity

2022-148 Live Oak Canal Bridge Replacement

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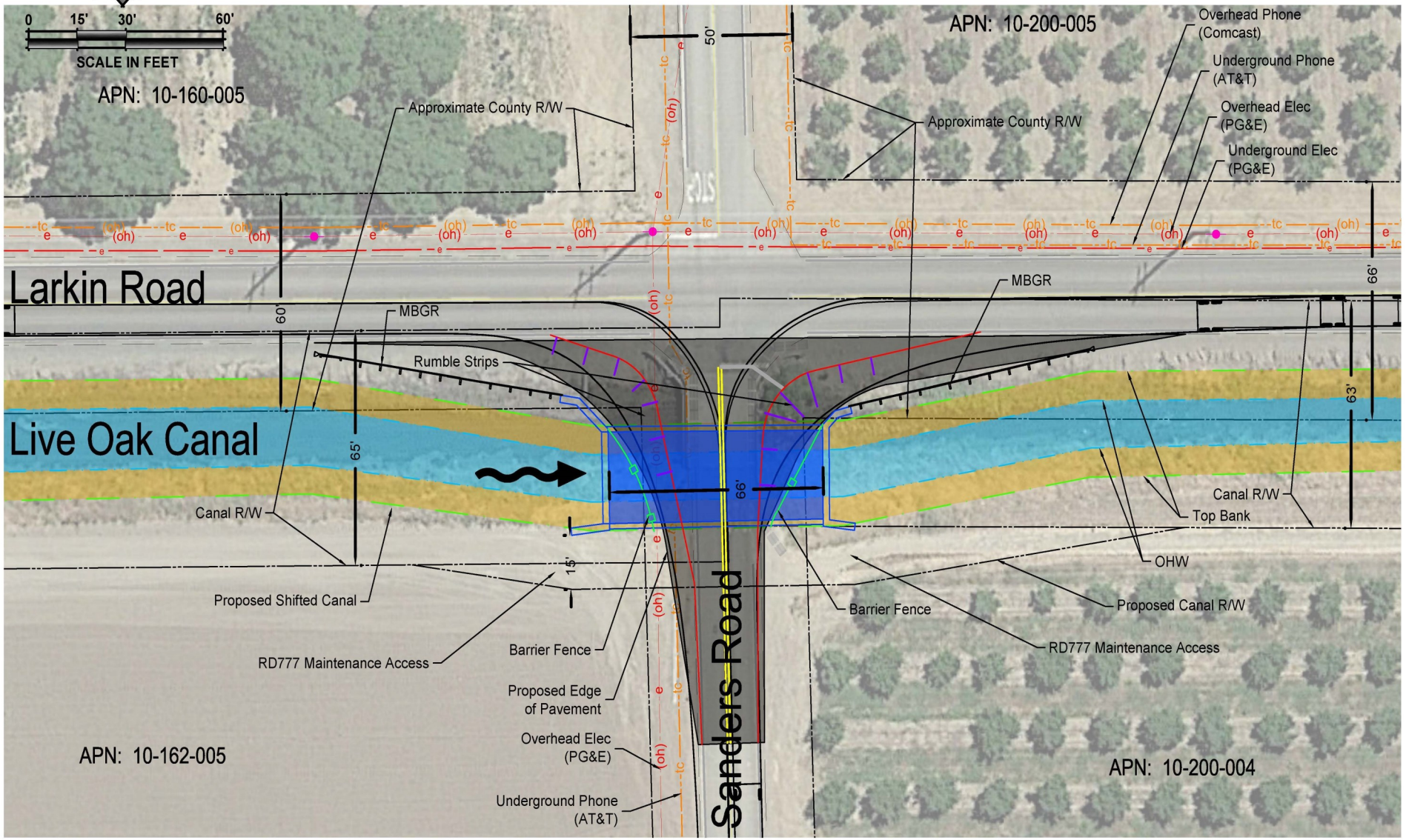

Source: R.E.Y. Engineers, Inc.

Figure 2-3. Conceptual Site Plan

2.2.1.2 Live Oak Canal Bridge

The Live Oak Canal Bridge was constructed in 1945 and has a sufficiency rating of 49.6, per the Bridge Inspection Records Information System, dated February 11, 2020. The existing Live Oak Canal Bridge consists of a single span cast-in-place/reinforced concrete slab. The structure is 25.9 feet long, has a total width of 22.0 feet, and has metal railings on each side. The structure sits on reinforced concrete abutments with monolithic wingwalls on both side of the abutments. The foundation types are unknown. The bridge structure also has a weir system built into the north side of the bridge abutments that can control the water level of the canal, but the system does not appear to be functional. The weir system will be removed during bridge demolition. The County has determined the weir will not be incorporated into the new structure and may be relocated to another location along the canal. This relocation is not part of the proposed Project and would need to be coordinated separately with RD 777.

2.2.1.3 Live Oak Canal

The canal is a 35- to 40-ft wide trapezoidal shaped channel with 1.5h:1v (horizontal to vertical) channel slopes. Water flows south within Live Oak Canal, which is unlined at the Project site. The primary purpose of the canal is to provide irrigation to nearby agriculture. The canal bottom is about 12 ft below the bridge deck. Approximately 10-ft wide sections of rock slope protection are in place adjacent to each abutment; the rock slope protection extends to the bottom of the canal and appears to have been placed to help prevent erosion from overside surface runoff and scour along the abutments. Signs of slope instability (shallow or deep-seated landslides, pavement, or shoulder cracks) were not observed at the site during a geotechnical investigation by Crawford & Associates, Inc. (Crawford) in August 2022 (Crawford 2022a). Signs of minor erosion (i.e. rills, rounding of the shoulder, etc.) from overside surface water runoff were primarily observed by Crawford along the eastern slope face (adjacent to Larkin Road). Ruderal vegetation including nonnative grasses were observed along the canal slopes. Two corrugated metal pipe culverts were observed about 30 feet north of the bridge and outlet onto the western and eastern canal slopes. Crawford also noted the canal had flowing surface water approximately 2 feet deep during their August 2022 field exploration.

2.2.2 Surrounding Land Uses

The Project site is surrounded by rural agricultural properties with orchards and single-family residences, and is approximately 1.3 miles west of SR 99. The Live Oak Canal runs parallel with Larkin Road within the Project vicinity. The closest single-family residence is located 300 feet west of the Project site, south of Sanders Road. Another single-family residence is located 900 feet east of the Project site, north of Sanders Road. There are additional single-family residences and agricultural machinery and appurtenances storage sites in each direction down Sanders Road on both the north and south sides of the road. Additional single-family residential uses exist 1,400 feet north of the Project site, on the east side of Larkin Road, and 1,900 feet south of the Project site. There are similar machinery and appurtenances storage areas on Larkin Road. Agricultural uses make up the rest of the area surrounding the Project site (Figure 2-4). A culvert runs underneath Larkin Road just north of the Sanders Road intersection and drains the field east of Larkin Road directly into the canal.

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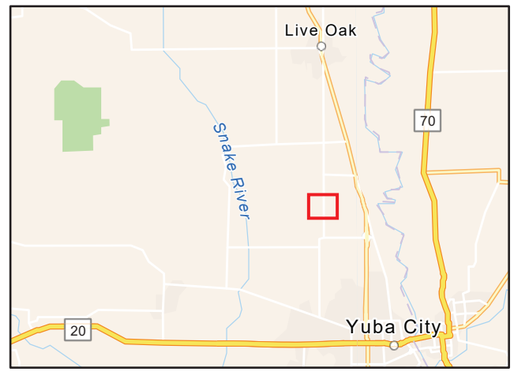
Map Contents

- Study Area - 4.78 ac.

Surrounding Land Use

- Agricultural
- Agricultural/Residential
- Native Vegetation
- Residential

Sources: Maxar (6/4/2021), ESRI, DWR, CDFW, Sutter County



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Map Date: 12/16/2022

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Scale in Feet
0 200 400

Figure 2-4. Surrounding Land Uses

2022-148 Live Oak Canal Bridge Replacement

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2.3 Project Characteristics

2.3.1 Project Construction

Project construction is anticipated to take 3-5 months, beginning in Spring 2024. Sanders Road will be closed to through traffic during Project construction, with traffic rerouted to nearby roads. The northern detour is approximately 3 miles and would utilize Broadway, Encinal Road, and Larkin Road. The southern detour is approximately 3.5 miles and would utilize Broadway, Nuestro Road, Tierra Buena Road, Eager Road, and Larkin Road (Figure 2-5). Residents that live within the closed portion of Sanders Road will be able to access their homes and property via the Sanders Road/Broadway intersection or via Madden Avenue. Staging and contractor storage will utilize the existing right-of-way on Sanders Road west of Live Oak Canal. The Project site will be accessed by construction personnel via the west side of Sanders Road at the intersection with Broadway in order to limit interruptions on Larkin Road. Prior to closing Sanders Road, temporary k-railing will be placed along the west lane line of Larkin Road to protect the Project site and allow the contractor as much room as possible for construction and paving activities. Larkin Road will be temporarily reduced to one lane for k-railing installation and re-opened prior to the closing of Sanders Road. K-railing installation is anticipated to take 2-3 workdays. After closing Sanders Road, the existing bridge would be removed. Canal realignment and improvements would occur next, followed by construction of the new bridge. Finally, the Project site would be paved and striped before Sanders Road is reopened.

Construction would occur between 7:00 A.M. and 6:00 P.M. on weekdays and 8:00 A.M. and 5:00 P.M. on Saturdays. The County prohibits construction noise on Sundays and holidays the contractor applies for permission.

2.3.2 Utilities

There are multiple utilities lines within the Project limits (Figure 2-3). An underground Comcast communication line runs along the east side of Larkin Road; this line will not be impacted by the Project. An overhead Pacific Gas & Electric Company (PG&E) electrical line runs along the east side of Larkin Road and on both the north and south sides of Sanders Road, west of Larkin Road. The line also runs on the north side of Sanders Road, east of Larkin Road. Facility maps also identify an underground electrical line running along the east side of Larkin Road following the overhead line. A partially underground AT&T communications line within the Project limits runs along the north side of Sanders Road, and is attached to the side of the existing bridge. The AT&T line will be impacted and require relocation. The AT&T line could be relocated overhead onto the PG&E poles before construction begins to minimize impacts during construction. The overhead PG&E electrical line that runs north along Sanders Road also has the potential to be impacted during construction. Consultation with PG&E prior to construction will determine the feasibility of whether the PG&E line can be left in service during the construction. Leaving the line in service would require extra caution during several construction activities that would slow the Project timeline. It may also be possible to de-energize this line, which would improve safety during construction, but would still require extra caution and a slowed timeline. This overhead line could be relocated prior to construction, which would avoid all conflicts during construction.

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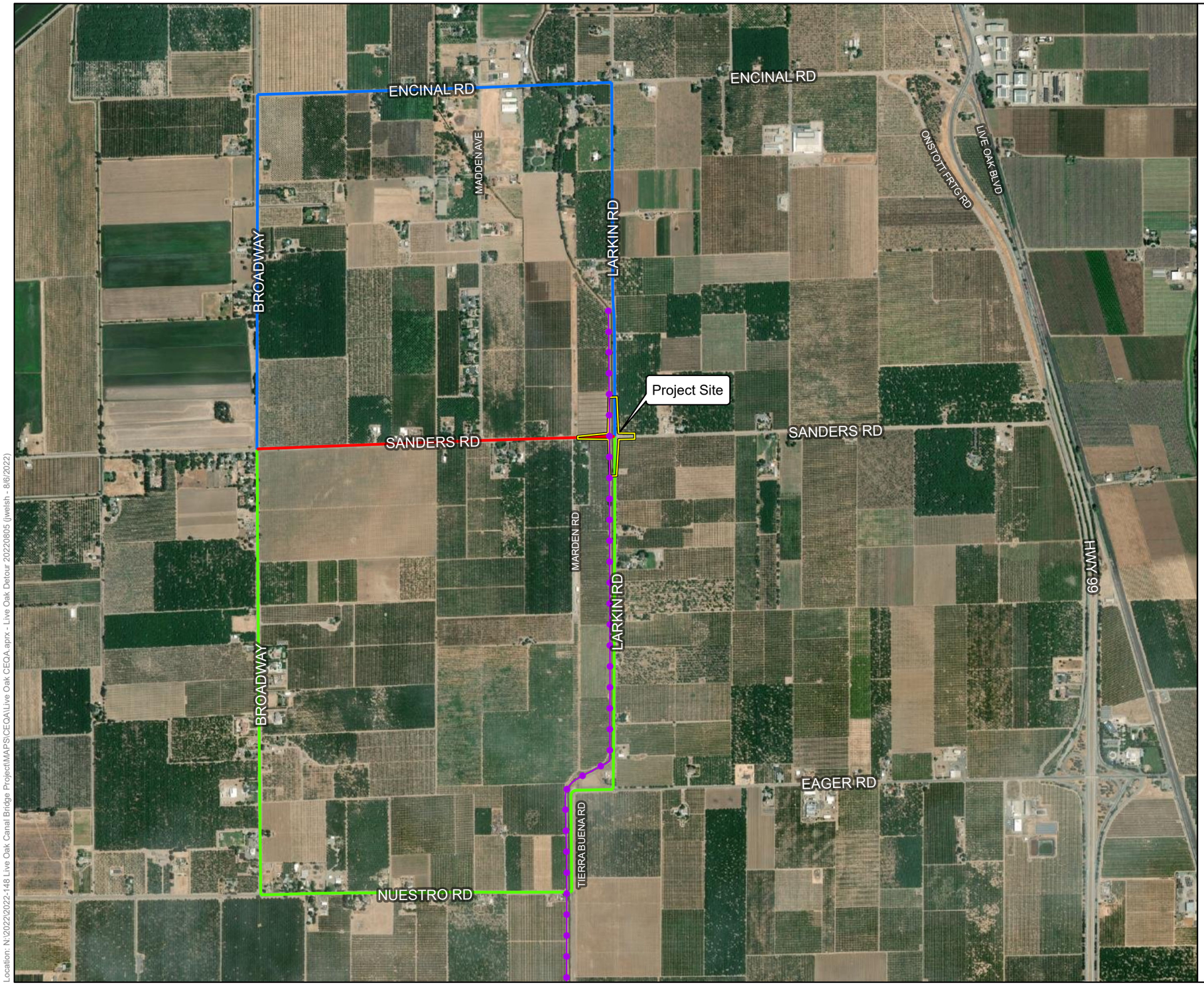

Map Contents

- APE Boundary - 4.78 ac.
- Road Closure
- Northern Road Detour
- Southern Road Detour
- Live Oak Canal

Sources: Maxar (6/4/2021), Sutter County, CDFW

Location: N:\2022\2022-148 Live Oak Canal Bridge Project\MAPS\CEQA\Live Oak CEQA aprx - Live Oak Detour 20220805 (jwelsh - 8/6/2022)

Map Date: 8/5/2022

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 1,500

Figure 2-5. Sanders Road Detour

2022-148 Live Oak Canal Bridge Replacement

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However, relocation over the overhead electric line would require additional right-of-way to be purchased for the Project and could delay the start of Project construction.

2.4 Regulatory Requirements, Permits, and Approvals

The proposed Project would require the following approvals and regulatory permits:

- Central Valley Regional Water Quality Control Board (RWQCB) National Pollutant Discharge Elimination System (NPDES) Permit and Stormwater Pollution Prevention Plan (SWPPP)
- RWQCB Section 401 Permit
- U.S. Army Corps of Engineers (USACE) Section 404 Permit
- California Department of Fish and Wildlife (CDFW) Section 1602 Permit
- Possible acquisition of Right-of-Way from two properties west of Live Oak Canal Bridge

2.5 Consultation With California Native American Tribe(s)

On November 1, 2022, the County of Sutter notified the following California Native American tribes traditionally and culturally affiliated with the geographic area of the proposed Project, initiating the 30-day response window: Estom Yumeka Maidu Tribe of the Enterprise Rancheria, Ione Band of Miwok Indians, Mechoopda Indian Tribe of Chico Rancheria, Mooretown Rancheria, Nevada City Rancheria Nisenan Tribe, Pakan'yani Maidu of Strawberry Valley Rancheria, Tsi Akim, United Auburn Indian Community, and Wilton Rancheria.

The letter for Grayson Coney with Tsi Akim was returned to sender as not able to be delivered.

On November 30, 2022, Scott Riddle, Senior Civil Engineer with Sutter County, received an email response from Anna Starkey with the United Auburn Indian Community, expressing gratitude for the opportunity, and indicated that they reviewed their Tribal Historical Resources Information System and did not identify any previously recorded Tribal Cultural Resources within or adjacent to the Project Area. Ms. Starkey included some language and standard unanticipated mitigation measures to be incorporated into the Tribal Cultural Resources chapter of the environmental document. There was no request for consultation.

No other responses were received. Therefore, consultation under Assembly Bill (AB) 52 can be considered complete as of December 2, 2022.

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3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED AND DETERMINATION

3.1 Environmental Factors Potentially Affected

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

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

Determination

On the basis of this initial evaluation:

I find that the Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	☐
I find that although the Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.	☒
I find that the Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.	☐
I find that the Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.	☐
I find that although the Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the Project, nothing further is required.	☐

Scott Riddle, Senior Civil Engineer
County of Sutter
Development Services Department

April 12, 2023

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4.0 ENVIRONMENTAL CHECKLIST AND DISCUSSION

4.1 Aesthetics

4.1.1 Environmental Setting

4.1.1.1 Visual Character of the Project Area

Sanders Road

Sanders Road begins at East Butte Road and continues east until intersecting with Onstott Frontage Road adjacent to US 99. The visual character along Sanders Road is dominated by a mix of rural agricultural properties with orchards and single-family residences. Agricultural uses make up the majority of the visual character surrounding the Project site (Figure 2-4). Running perpendicular to Sanders Road, the Live Oak Canal flows underneath the Live Oak Canal Bridge on Sanders Road and is viewable from the Project site. From the Live Oak Canal Bridge, views to the west include the distant Caldwell Hills.

Larkin Road

Larkin Road begins at Broadway in the city of Live Oak and continues South until intersecting with Eager Road. The visual character along Larkin Road is very similar to Sanders Road as it is dominated by a mix of rural agricultural properties with orchards and single-family residences. The Live Oak Canal runs parallel with Larkin Road within the Project site. A culvert runs underneath Larkin Road just north of the Sanders Road intersection and drains the field east of Larkin Road directly into the canal.

Project Site

Live Oak Canal Bridge is located on Sanders Road at the intersection with Larkin Road. The Project site is surrounded by rural agricultural properties with orchards and single-family residences.

4.1.2 Aesthetics (I) Environmental Checklist and Discussion

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒

No Impact.

A scenic vista is generally defined as an expansive view of a highly valued landscape observable from a publicly accessible vantage point. In the Project vicinity, publicly accessible vantage points are limited to public roads. Views along Sanders Road and Larkin Road are of the existing rural agricultural properties present in the area. There are no long-range views of scenic vistas available in the Project vicinity. As the Project site does not contribute to any scenic vistas, the proposed Project would have no impacts to any scenic vistas. There would be no impact.

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒

No Impact.

Scenic resources are physical features that provide scenic value to a project site and its surroundings. These typically include topographic, geologic, hydrologic, and biological resources (for example, hills, rock outcroppings, creeks, woodlands, or landmark trees). The site does not provide substantial scenic resources. There are no state-designated or eligible scenic highways or routes in the Project vicinity. There would be no impact.

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒

No Impact.

The site is located in an area that contains rural residential agricultural properties which include orchards and single-family residences. The Project would not cause a detriment to the visual identity and character of surrounding land uses, as there is an existing bridge that would be replaced with a new one. There would be no impact.

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Would the Project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

No Impact.

The Project would not introduce lighting beyond the existing condition during operation. There would be no impact.

4.1.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.2 Agriculture and Forestry Resources

4.2.1 Environmental Setting

Sutter County is located within the northern portion of California's Central Valley in the area known as the Sacramento Valley. Sutter County is one of California's leading agricultural counties, with over 90 percent of the County's total land acreage currently being used for agricultural purposes. The leading crops within the county include rice, walnuts, peaches, tomatoes, and almonds (Sutter County 2010b; 2020).

4.2.2 Regulatory Setting

Laws and regulations relevant to the proposed project are presented below.

4.2.2.1 State

Williamson Act

The Williamson Act is an agricultural conservation tool. Under the Williamson Act, local governments can enter into contracts with private property owners to protect land for agricultural and open space purposes. The Project site and surrounding parcels do not contain any land that is protected by Williamson Act contracts.

Farmland Mapping and Monitoring Program

The California Department of Conservation, Division of Land Resource Protection, administers the Farmland Mapping and Monitoring Program (FMMP). The program produces agricultural resource inventories and maps that rate agricultural lands based on soil quality, irrigation status, and land use within California. These ratings are used to help prioritize farmland conservation efforts. The FMMP uses the term "Import Farmland" to describe parcels that meet certain criteria. The Project site is surrounded by Important Farmland (Sutter County 2010b).

4.2.3 Agriculture and Forestry Resources (II) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐

Less than Significant Impact.

The Project site is located within an actively producing agricultural area. The site is surrounded by Farmland of Statewide Importance as identified in the County's General Plan EIR (2010b). Replacement of the Live Oak Canal Bridge would not result in the conversion of any agricultural land to non-agricultural use. Construction, including the Sanders Road closure, may conflict with current operations of surrounding areas related to the use of Sanders Road. Suitable detours will be marked within the vicinity of the Project site and are identified in Figure 2-5. Potential impacts during Project construction would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

No Impact.

The Project site and surrounding parcels do not contain any land that is protected by Williamson Act contracts. There would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒

No Impact.

The Project site is not zoned as forest land, does not contain forest land or forest resources, and does not support any forest uses. There would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒

No Impact.

See answer to 4.2.2 c). There would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

No Impact.

As discussed above, construction and operation of the proposed Project would not result in conversion of any farmland to non-agricultural use or forest land or non-forest use. There would be no impact.

4.2.4 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.3 Air Quality

This assessment was prepared using methods and assumptions recommended in the rules and regulations of the Feather River Air Quality Management District and Sutter County. Regional and local existing conditions are presented, along with pertinent pollutant emissions standards and regulations. The purpose of this assessment is to estimate criteria air pollutants attributable to the Project and determine the level of impact the Project would have on the environment.

4.3.1 Environmental Setting

The Project site is located on the eastern edge of Sutter County, between Yuba City and Live Oak. The California Air Resources Board (CARB) divides the state into air basins that share similar meteorological and topographical features. The Proposed Project is located in the Northern Sacramento Valley Air Basin (NSVAB), which includes the counties of Butte, Colusa, Glenn, Shasta, Sutter, Tehama, and Yuba. The air basin is relatively flat, bordered by mountains to the east, west, and north and by the San Joaquin Valley to the south. Hot, dry summers and mild, rainy winters characterize the Mediterranean climate of the Sacramento Valley. Because the valley in a bowl-like shape, this can trap pollutants and a temperature inversion layer can create unhealthy pollution concentrations.

Both the U.S. Environmental Protection Agency (USEPA) and CARB have established ambient air quality standards for common pollutants. These ambient air quality standards establish safe levels of contaminants that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called criteria pollutants because the health and other effects of each pollutant are described in criteria documents. The six criteria pollutants are Ozone (O_3), Carbon Monoxide (CO), Particulate Matter (PM), Oxides of Nitrogen (NO_x), Sulfur Dioxide (SO_2), and lead. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas.

The air quality regulating authority in Sutter County is the Feather River Air Quality Management District (FRAQMD). The agency's primary responsibility is ensuring that the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) are attained and maintained in the Sutter and Yuba Counties, within the NSVAB. The unique mountain-encompassed geography with its potential for trapped pollutants underscores the importance of the FRAQMD regulating air pollution. Sutter County is designated as a non-attainment area for the state standards of O_3 and PM_{10} (particulate matter less than 10 microns in diameter) (CARB 2019). Additionally, Sutter County is in attainment for all NAAQS. The FRAQMD is responsible for adopting or creating a comprehensive plan to reduce the emissions of these criteria pollutants. They also enforce rules and regulations, inspect and issue permits for stationary sources of air pollutants, respond to citizen complaints, monitor ambient air quality and meteorological conditions, award grants to reduce motor vehicle emissions, and conduct public education campaigns. The FRAQMD coordinates work from government agencies, businesses, and private citizens to achieve and maintain healthy air quality.

4.3.2 Air Quality (III) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☒	☐	☐

Less than Significant with Mitigation Incorporated.

The USEPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the California Clean Air Act requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the NAAQS and CAAQS. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

As previously mentioned, the Project Site is located within the Sutter County portion of the NSVAB, which is under the jurisdiction of the FRAQMD. The FRAQMD is required, pursuant to the Clean Air Act, to reduce emissions of criteria pollutants for which the NSVAB is in nonattainment. The FRAQMD attains and maintains air quality conditions in Sutter County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. Their current strategies are included in the *Northern Sacramento Valley Planning Area Triennial Air Quality Attainment Plan* (2021), which contains mechanisms to achieve ozone standards. These pollutant control strategies are based on the latest scientific and technical information and planning assumptions, updated emission inventory methodologies for various source categories, and the latest population growth projections and associated vehicle miles traveled projections for the region. FRAQMD's latest population growth forecasts were defined in consultation with local governments and with reference to local general

plans. A project conforms with the FRAQMD attainment plans if it complies with all applicable district rules and regulations, complies with all control measures from the applicable plan(s), and is consistent with the growth forecasts in the applicable plan(s) (or is directly included in the applicable plan).

Growth projections are based on the Sutter County General Plan. As such, projects that propose development consistent with the growth anticipated by the respective general plan of the jurisdiction in which the project is located would be consistent with FRAQMD air quality planning. If a project, however, proposes a project that increases the population density than that assumed in the general plan, the project may conflict with FRAQMD air quality planning efforts and could result in a significant impact on air quality. The Project is proposing a replacement of a bridge. It would not increase the number of homes, jobs or provide additional infrastructure in the area and would not contribute to emissions once the construction of the bridge is complete. Additionally, to comply with all applicable FRAQMD rules and regulations, the proposed Project would also have to adhere to the daily and annual thresholds for individual pollutants. As demonstrated below, the unmitigated proposed Project construction phase would surpass the FRAQMD's significance threshold for NO_x. This could potentially pose a significant impact to air quality, however, with the incorporation of Mitigation Measure AQ-1, the pollutant emissions would be under the threshold. This would allow the Project to adhere to all applicable air quality plans and make the impact less than significant with mitigation incorporated.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☒	☐	☐

Less than Significant with Mitigation Incorporated.

According to the FRAQMD, an air quality impact is considered significant if the proposed Project would violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations.

4.3.2.1 Construction Impacts

Emissions generated during Project construction were calculated using the CARB-approved California Emissions Estimator Model (CalEEMod) version 2020.4.0 computer program, which is designed to model emissions for land use development projects, based on typical and assumed construction requirements. As per the Project Description, during the canal bridge replacement construction period, regular traffic flow will be rerouted on a detour. This detour will add approximately 1.2 additional miles to usual commute routes in the Project vicinity, on average. Given the roadway vehicle trip volumes provided in the Project Description, calculations have been made using CARB's 2021 version of the Emission Factor Model (EMFAC) to assess the additional emissions that this detour would cause during the construction period.

Predicted maximum daily and annual emissions that would be generated during Project construction are summarized in Table 4.3-1. Project emissions are short-term and of temporary duration, lasting only as long as Project construction would occur, and are therefore compared with the FRAQMD's construction-related thresholds. While emissions would be temporary, they would be considered a significant air quality impact if the volume of pollutants generated exceeds the FRAQMD's thresholds of significance.

Table 4.3-1. Construction-Related Emissions – Unmitigated

Construction Year	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Daily (pounds per day)						
Construction year one	5.08	49.49	39.37	0.08	23.14	12.44
Additional detour emissions	0.42	7.74	7.66	0.00	0.00	0.00
Total emissions from Project	5.50	57.23	47.03	0.08	23.14	12.44
FRAQMD Daily Significance Threshold	*25*	*25*	-	-	*80*	-
Exceed FRAQMD Daily Threshold?	**No**	**Yes**	**No**	**No**	**No**	**No**
Annual (tons per year)						
Construction year one	0.16	1.36	1.71	0.00	0.19	0.10
Additional detour emissions	0.02	0.43	0.42	0.00	0.00	0.00
Total emissions from Project	0.18	1.79	2.13	0.00	0.19	0.10
FRAQMD Annual Significance Threshold	4.5	4.5	-	-	-	-
Exceed FRAQMD Annual Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: NO_x and Reactive Organic Gas (ROG) construction emissions many be averaged over the life of a project but may not exceed 4.5 tons per year
Source: CalEEMod version 2020.4.0. CARB EMFAC 2021a. Refer to Appendix A for Model Data Outputs.

As shown in Table 4.3-1, Project emissions would exceed the FRAQMD's NO_x significance thresholds during construction. Therefore, Mitigation Measure AQ-1 is required in order to reduce NO_x emissions to levels below the significance threshold. Mitigation Measure AQ-1 would require the use of construction equipment with Tier 4 Certified engines during construction activities.

The first federal standards (Tier 1) for new off-road diesel engines were adopted in 1994 for engines over 50 horsepower and were phased in from 1996 to 2000. In 1996, a Statement of Principles pertaining to off-road diesel engines was signed between the USEPA, CARB, and engine makers (including Caterpillar,

Cummins, Deere, Detroit Diesel, Deutz, Isuzu, Komatsu, Kubota, Mitsubishi, Navistar, New Holland, Wis-Con, and Yanmar). On August 27, 1998, the USEPA signed the final rule reflecting the provisions of the Statement of Principles. The 1998 regulation introduced Tier 1 standards for equipment under 50 horsepower and increasingly more stringent Tier 2, Tier 3, and Tier 4 standards for all equipment with phase-in schedules from 2000 to 2015. As a result, all off-road, diesel-fueled construction equipment manufactured from 2006 to 2015 has been manufactured to Tier 3 standards. The Tier 3 standards can reduce NO_x emissions by as much as 64 percent and PM emissions by as much as 39 percent. On May 11, 2004, the USEPA signed the final rule introducing Tier 4 emission standards, which are currently phased-in over the period of 2008-2015. The Tier 4 standards require that NO_x emissions be further reduced by about 90 percent. All off-road, diesel-fueled construction equipment manufactured in 2015 or later have been manufactured to Tier 4 standards.

Table 4.3-2 shows Project construction emissions with the imposition of Mitigation Measure AQ-1.

Table 4.3-2. Construction-Related Emissions - Mitigated

Construction Year	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Daily (pounds per day)						
Construction year one	1.08	4.81	45.63	0.08	21.00	10.47
Additional detour emissions	0.42	7.74	7.66	0.00	0.00	0.00
Total emissions from Project	1.50	12.55	53.29	0.08	21.00	10.47
FRAQMD Daily Significance Threshold	*25*	*25*	-	-	*80*	-
Exceed FRAQMD Daily Threshold?	**No**	**Yes**	**No**	**No**	**No**	**No**
Annual (tons per year)						
Construction year one	0.05	0.25	1.86	0.00	0.13	0.05
Additional detour emissions	0.02	0.43	0.42	0.00	0.00	0.00
Total emissions from Project	0.07	0.68	2.28	0.00	0.13	0.05
FRAQMD Annual Significance Threshold	4.5	4.5	-	-	-	-
Exceed FRAQMD Annual Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: NO_x and ROG construction emissions many be averaged over the life of a project but may not exceed 4.5 tons per year
Source: CalEEMod version 2020.4.0. CARB EMFAC 2021a. Refer to Appendix A for Model Data Outputs.

As shown in Table 4.3-2, implementation of Mitigation Measure AQ-1 would reduce NO_x emissions during construction activities to levels below the FRAQMD thresholds. With implementation of Mitigation Measure AQ-1, criteria pollutant emissions generated during Project construction would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard, and no health effects from Project criteria pollutants would occur. This impact is less than significant.

4.3.2.2 Long-Term Operational Impacts

The proposed Project involves the replacement of canal bridge. It would not include the addition of new permanent stationary or mobile sources of emissions to the Project site. Therefore, operational emissions would have no impact on long-term air quality impacts.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐

Less than Significant Impact with Mitigation Incorporated.

Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest sensitive receptor to the Project Site is a single-family residence located 300 feet west of the Project Site, south of Sanders Road. Another residence is located 900 feet east, just north of Sander Road.

Construction-related activities would result in temporary, short-term Project-generated emissions of Diesel Particulate Matter (DPM), ROG, NO_x, CO, and PM_{10} from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., clearing, grading); paving; and other miscellaneous activities. The Sutter County portion of the NSVAB is listed as non-attainment for the California standards of O_3 and PM_{10} (CARB 2019). Thus, existing O_3 and PM_{10} are at unhealthy levels during certain periods.

The health effects associated with O_3 are generally associated with reduced lung function. With implementation of Mitigation Measure AQ-1, the Project would not involve construction activities that would result in high levels of O_3 precursor emissions (ROG or NOx) in excess of the FRAQMD thresholds, the Project is not anticipated to substantially contribute to regional O_3 concentrations and the associated health impacts.

CO tends to be a localized impact associated with congested intersections. In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment

of central nervous system functions. The Project would not involve construction activities that would result in CO emissions in that would pose a health risk to the nearby residences. The exposure from construction would be temporary and due air flow within the area, would not result in a concentrated exposure to CO. Thus, the Project's CO emissions would not contribute to the health effects associated with this pollutant.

PM_{10} and $PM_{2.5}$ contain microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. PM exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing. For construction activity, DPM is the primary Toxic Air Contaminant (TAC) of concern. The potential cancer risk from the inhalation of DPM outweighs the potential for all other health impacts (i.e., non-cancer chronic risk, short-term acute risk) and health impacts from other TACs. PM_{10} exhaust is considered a surrogate for DPM as all diesel exhaust is considered to be DPM. As with O_3 and NO_x, the Project would not generate emissions of PM_{10} that would exceed the FRAQMD's thresholds. Additionally, Mitigation Measure AQ-1 lowers the amount of PM_{10} and $PM_{2.5}$ emitted from construction. Accordingly, the Project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects for these pollutants.

In summary, Project construction would not result in a potentially significant contribution to regional concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants.

4.3.2.3 Operational Air Contaminants

Operation of the proposed Project would not result in the development of any substantial sources of air toxics. There are no stationary sources associated with the operations of the Project; nor would the Project attract mobile sources that spend long periods queuing and idling at the site. Thus, the Project would not be a source of TAC concentrations post-construction.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Less than Significant Impact.

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have

sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

During construction, the proposed Project presents the potential for generation of objectionable odors in the form of diesel exhaust in the immediate vicinity of the site. However, these emissions are short-term in nature and will rapidly dissipate and be diluted by the atmosphere downwind of the emission sources. Additionally, odors would be localized and generally confined to the construction area. Therefore, construction odors would not adversely affect a substantial number of people to odor emissions.

Land uses commonly considered to be potential sources of obnoxious odorous emissions include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The proposed Project does not include any uses identified as being associated with odors. The new bridge would not emit odors, and impacts would be less than significant.

4.3.3 Mitigation Measures

AQ-1: CARB Tier 4 Compliance

The Project applicant and/or its contractor shall require that all Project construction equipment shall be California Air Resources Board (CARB) Tier 4 Certified, as set forth in Section 2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 of the Code of Federal Regulations.

4.4 Biological Resources

This section is based on the analysis and recommendations presented in the *Biological Resources Assessment* (BRA) (ECORP 2022b, Appendix B), *Aquatic Resources Delineation* (ARD) (ECORP 2022c, Appendix C), and *Special-Status Plant Survey and Valley Elderberry Longhorn Beetle Survey* (ECORP 2022d, Appendix D) prepared for the proposed Project. The purpose of this section is to assess the potential for occurrence of special-status plant and animal species or their habitats and sensitive habitats such as wetlands, riparian communities, and sensitive natural communities within the Study Area. The Study Area

is defined as the environmental study limits within which the Project will occur. The approximately 4.78-acre Study Area is at the intersection of Sanders Road and Larkin Road, approximately 3 miles north of Yuba City, California (Figure 4.4-1).

This assessment includes information generated from the reconnaissance-level site assessment and preliminary wetland assessment surveys for biological and aquatic resources onsite. Wildlife species presence was evaluated based on the results of the site assessment. A preliminary aquatic resources assessment was performed according to USACE standards and is discussed within this section and the BRA.

Literature Review

The following resources were reviewed to determine the special-status species that were documented within or in the vicinity of the Study Area or that otherwise had the potential to occur onsite:

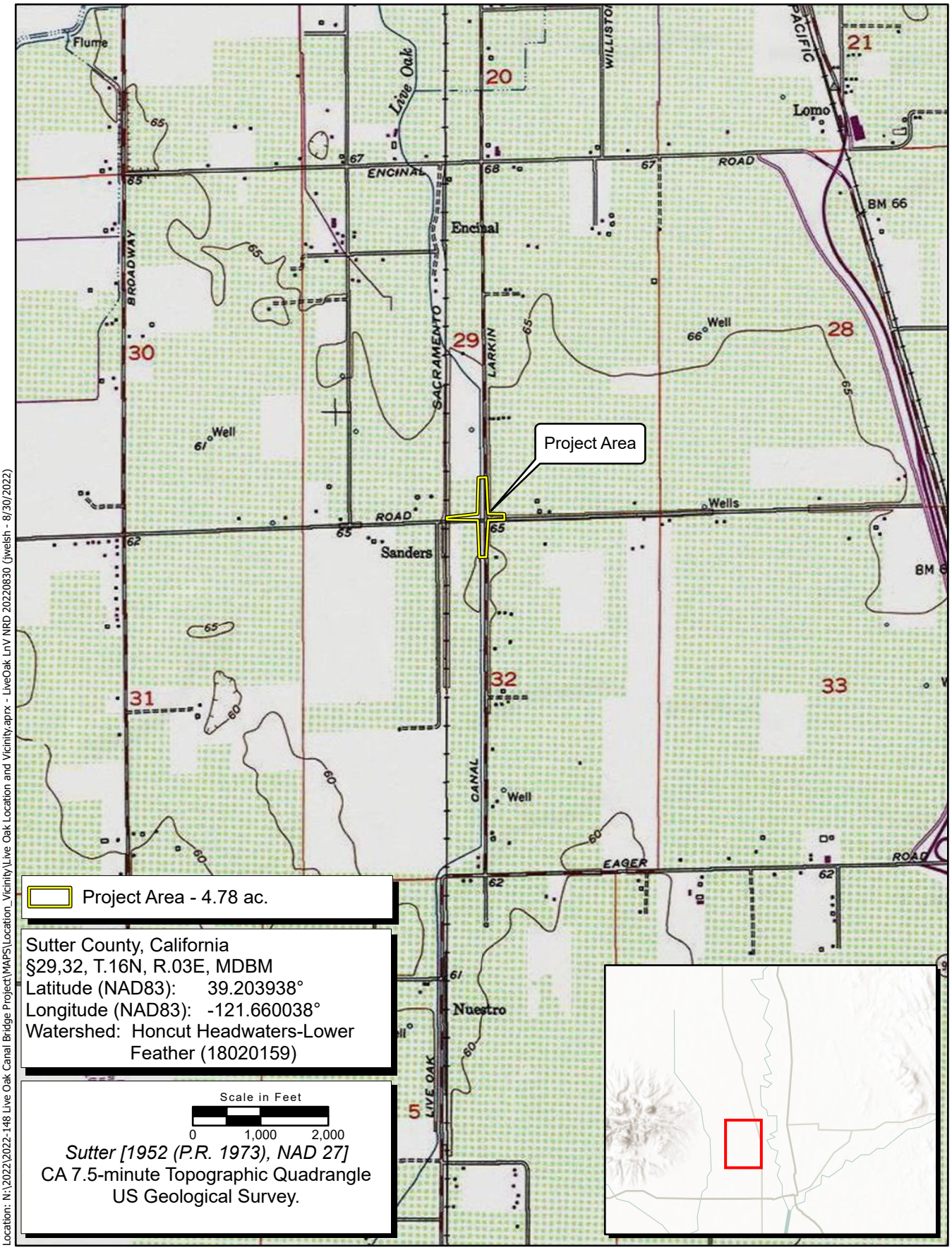
- The California Natural Diversity Database (CNDDB) for the nine U.S. Geological Survey (USGS) topographic quadrangles centered on the "Sutter, California" 7.5-minute USGS topographic quadrangle (CDFW 2022, USGS 1952).
    - The USFWS Information for Planning and Consultation Species list for the Study Area (USFWS 2022).
    - The CNPS electronic Inventory of Rare and Endangered Plants of California for the nine USGS topographic quadrangles centered on the "Sutter, California" 7.5-minute USGS topographic quadrangle (CNPS 2022).
    - National Oceanic and Atmospheric Administration (NOAA) species list (NOAA 2022a)
    - Results of the literature review are provided in Attachment A of Appendix B.

Field Assessment

ECORP Staff Biologist Daniel Wong conducted a site reconnaissance visit on August 1, 2022. Accessible portions of the Study Area were assessed by walking meandering transects, and inaccessible portions were visually assessed through the use of binoculars. Vegetation communities occurring within the Study Area were characterized, and the following biological resource information was collected:

- Direct observations of special-status species or their habitats;
- Animal and plant species directly observed (Attachments B and C of Appendix B, respectively);
- Habitat and vegetation communities;

Representative photographs of the Study Area are available in Attachment D of Appendix B.



Location: N:\2022\2022-148 Live Oak Canal Bridge Project\MAPS\Location_Vicinity\Live Oak Location and Vicinity.aprx - LiveOak LnV NRD 20220830 (jwelsh - 8/30/2022)

Map Date: 8/30/2022
Sources: ESRI, USGS

Figure 4.4-1. Study Area Location and Vicinity

Additional Surveys Conducted Concurrently with the BRA

Aquatic Resources Delineation

An ARD was conducted in conjunction with the site reconnaissance. The ARD 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: Arid West Region* (USACE 2008a). Nonwetland waters were identified in the field according to *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b). Aquatic resources within the Study Area were recorded in the field using a postprocessing-capable Geographic Positioning System (GPS) unit with submeter accuracy (e.g., Samsung Galaxy Tablet, FieldMaps for ArcGIS application with Juniper System Geode GPS unit with real-time correction).

Special-Status Plant Survey

A determinate-level special-status plant survey was conducted within the Study Area in concurrence with the site reconnaissance. Surveys were conducted in accordance with guidelines promulgated by USFWS (USFWS 2000), CDFW (CDFW 2018), and CNPS (CNPS 2001). Findings are discusses in Section 4.4.2.5.

Valley Elderberry Longhorn Beetle Survey

Concurrent with the site reconnaissance, a determinate-level survey for Valley Elderberry Longhorn Beetle (VELB) was conducted throughout the site. The survey was conducted in accordance with the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 2017). Inaccessible private properties within the 165-foot VELB survey buffer were visually assessed from within the Study Area. No elderberry shrubs (*Sambucus nigra*) were found within or immediately adjacent to the Study Area during this survey.

4.4.2 Environmental Setting

4.4.2.1 Site Characteristics and Land Use

The Study Area is located within relatively flat terrain situated at an elevational range of approximately 60 to 70 feet above Mean Sea Level (MSL) in the Sacramento Valley Subregion of the Great Central Valley floristic region of California (Baldwin et al. 2012). The average winter low temperature in the vicinity of the Study Area is 40.4 degrees Fahrenheit (˚F) and the average summer high temperature is 94.7 ˚F. Average annual precipitation is approximately 22.04 inches, which falls as rain (NOAA 2022d).

The Study Area is a mix of paved and dirt roads that runs parallel to or across Live Oak Canal, and surrounding land use consists of orchards and rural residential development. A narrow, concrete bridge crosses Live Oak Canal, where cliff swallows (Petrochelidon pyrrhonota) were observed nesting on the underside of the bridge.

4.4.2.2 Soils

According to the Web Soil Survey (NRCS 2022), two soil units, or types, have been mapped within the Study Area (Figure 4.4-2):

- 126 – Conejo-Tisdale complex, 0-percent slopes, MLRA 17
- 174 – Tisdale clay loam, 0- to 2-percent slopes
- Conejo-Tisdale complex, 0-percent slopes, MLRA 17 (126) is a soil unit primarily composed of the Conejo soil series that consists of very deep, well-drained soils that formed in alluvium from basic igneous or sedimentary rocks (NRCS 2022). Tisdale clay loam, 0- to 2- percent slopes (174) is a unit that is dominated by the Tisdale soil series that consists of moderately deep, well-drained soils that formed in alluvium from mixed sources (NRCS 2022).

4.4.2.3 Vegetation Communities

Ruderal

The majority of the Study Area is composed of a ruderal vegetation community, which is often found along disturbed areas such as roadsides. This community was made up of nonnative annual grasses and forbs such as cheeseweed (Malva parviflora), prickly lettuce (Lactuca serriola), and wild oats (Avena sp.). Other species observed include white goosefoot (Chenopodium album), Italian thistle (Carduus pycnocephalus), and stinkwort (Dittrichia graveolens).

Agriculture

The Study Area includes parts of the surrounding orchards consisting of walnuts (Juglans sp.) and various stone fruits (Prunus sp.), with scattered nonnative grasses such as spotted spurge (Euphorbia maculata) and Bermuda grass (Cynodon dactylon) dominating the understory.

4.4.2.4 Aquatic Resources

A total of 0.637 acre of aquatic resources was mapped within the Study Area, including a ditch. A discussion of aquatic resources is presented below, and the ARD map is presented on Figure 4.4-3. Aquatic Resources Delineation.

Ditch (Live Oak Canal)

The Live Oak Canal is a watershed drainage ditch that is mapped flowing from the north to south through the Study Area. It is owned, maintained, and operated by RD 777. The ditch is mostly open water with vegetation along the steep banks dominated by smartweed (Persicaria hydropiper), slender willow herb (Epilobium ciliatum), and American pokeweed (Phytolacca americana).

Map Contents

Project Area - 4.78 ac.

Soil Types within Study Area

126 - Conejo-Tisdale complex, 0 percent slopes, MLRA 17

174 - Tisdale clay loam, 0 to 2 percent slopes

Sources: Maxar (6/4/2021), ESRI, USDA NRCS gSSURGO (2019), Sutter County

Location: N:\2022\2022-148 Live Oak Canal Bridge Project\MAPS\Soils_and_Geology\LiveOak Soils aprx - LiveOak Soils 20220830 (jwelsh - 8/30/2022)

Map Date: 8/30/2022

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Scale in Feet
0 100 200

Figure 4.4-2. Natural Resources Conservation Service Soil Types

2022-148 Live Oak Canal Bridge Replacement

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Map Contents

Project Area - 4.78 ac.

Sample Points

- Upland Point
- Waters Point
- Transect

Aquatic Resource

- Ditch - 0.637 ac

Photo Source: Maxar (6/4/2021)
Boundary Source: R.E.Y. Engineers, Inc.
Delineator(s): Daniel Wong
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet

Subject to U.S. Army Corps of Engineers verification. This exhibit depicts information and data produced in accord with the wetland delineation methods described in the 1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region Version 2.0 as well as the Updated Map and Drawing Standards for the South Pacific Division Regulatory Program as amended on February 10, 2016, and conforms to Sacramento District specifications. However, feature boundaries have not been legally surveyed and may be subject to minor adjustments if more accurate locations are required.

Location: N:\2022\2022-148 Live Oak Canal Bridge Project\MAPS\Jurisdictional_Delineation\LiveOak Aquatic Resources.aprx - LiveOak ARD 20220830 (jwelsh - 9/1/2022)

Map Date: 9/1/2022

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Scale in Feet
0 150

Figure 4.4-3. Aquatic Resources Delineation

2022-148 Live Oak Canal Bridge Replacement

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4.4.2.5 Evaluation of Special-Status Species

For the purposes of this assessment, special-status species are defined as plants or animals that:

- are listed, proposed for listing, or candidates for future listing as threatened or endangered under the federal Endangered Species Act (ESA);
- are listed or candidates for future listing as threatened or endangered under the California ESA;
- meet the definitions of endangered or rare under Section 15380 of the California Environmental Quality Act (CEQA) Guidelines;
- are identified as a Species of Special Concern (SSC) by the California Department of Fish and Wildlife (CDFW);
- are birds identified as Birds of Conservation Concern (BCC) by the U.S. Fish and Wildlife Service (USFWS);

Table 4.4-1. Special-Status Species Evaluated for the Project lists all the special-status plant and animal species identified in the database queries and literature review as having potential to occur within the Study Area. Included in this table is the listing status for each species, a brief habitat description, approximate flowing period for plants or survey period for animals, and a determination on the potential to occur within the Study Area. Following the table is a brief description and discussion of each special-status species that has potential to occur within the Study Area.

Based on species occurrence information from the literature review, observations in the field, and species occurrence information from the literature review, the list of special-status plant and animal species was analyzed for their potential to occur onsite. Each of the potentially occurring species was evaluated based on the following criteria:

- **Present** – Species was observed during field surveys or is known to occur within the Study Area based on documented occurrences within the CNDDB or other literature.
- **Potential to Occur** – Habitat (including soil and elevation requirements) for the species occurs within the Study Area based on site assessment and literature research.
- **Low Potential to Occur** – Marginal or limited amounts of habitat occur, and/or the species is not known to occur within the vicinity of the Study Area based on CNDDB records and other available documentation.
- **Absent** – No suitable habitat (including soils and elevation requirements) and/or the species is not known to occur within the vicinity of the Study Area based on CNDDB records and other documentation.

Table 4.4-1. Special-Status Species Evaluated for the Project

Common Name (Scientific Name)	Status[1]			Habitat Description	Survey Period	Potential to Occur Onsite
	FESA	CESA/ NPPA	Other			
Plants						
Ferris' milk-vetch (*Astragalus tener* var. *ferrisiae*)	–	–	1B.1	Found in vernally mesic meadows and seeps and in sub-alkaline flats within valley and foothill grasslands (7′ – 246′).	April-May	Absent. No suitable habitat present onsite.
Heartscale (*Atriplex cordulata* var. *cordulata*)	–	–	1B.2	Alkaline or saline valley and foothill grasslands, meadows and seeps, and chenopod scrub communities (0′ – 1,835′).	April-October	Absent. No suitable habitat present onsite.
Lesser saltscale (*Atriplex minuscula*)	–	–	1B.1	Alkaline, sandy soils in chenopod scrub, playas, and valley and foothill grassland (50′ – 655′).	May-October	Absent. No suitable habitat present onsite.
Subtle orache (*Atriplex subtilis*)	–	–	1B.2	Alkaline valley and foothill grasslands (130′ – 330′).	June-September	Absent. No suitable habitat present onsite.
Valley brodiaea (*Brodiaea rosea* spp. *vallicola*)	–	–	4.2	Occurs in old alluvial terraces and silty, sandy, or gravelly soils in vernal pools within valley and foothill grassland (33′ - 1,100′).	April-May (June)	Absent. No suitable habitat present onsite.
Pink creamsacs (*Castilleja rubicundula* var. *rubicundula*)	–	–	1B.2	Serpentinite substrates in chaparral openings, cismontane woodland, meadows and seeps, and valley and foothill grassland (66′ – 2,986′).	April–June	Absent. No suitable habitat present onsite.
Pappose tarplant (*Centromadia parryi* ssp. *parryi*)	–	–	1B.2	Often on alkaline soils within chaparral, coastal prairie, meadows and seeps, coastal salt marshes and swamps, vernally mesic valley and foothill grassland (0′ – 1,380′).	May-November	Absent. No suitable habitat present onsite.

Table 4.4-1. Special-Status Species Evaluated for the Project

Common Name (Scientific Name)	Status[1]			Habitat Description	Survey Period	Potential to Occur Onsite
	FESA	CESA/ NPPA	Other			
Parry's rough tarplant (*Centromadia parryi* ssp. *rudis*)	–	–	4.2	Occurs in vernal pools and valley and foothill grassland with alkaline and vernally mesic soils, seeps, and sometimes roadsides (0' - 328').	May-October	Low Potential. Marginally suitable habitat present onsite. Not found during 2022 protocol surveys.
Red-stemmed cryptantha (*Cryptantha rostellata*)	–	–	4.2	Occurs on gravelly, volcanic openings as well as roadsides in cismontane woodland and valley and foothill grassland (131' - 2,625').	April-June	Absent. No suitable habitat present onsite.
Recurved larkspur (*Delphinium recurvatum*)	–	–	1B.2	Chenopod scrub, cismontane woodland, and valley and foothill grasslands (10' – 2,592').	March-June	Absent. No suitable habitat present onsite.
Shield-bracted monkeyflower (*Erythranthe glaucescens*)	–	–	4.3	Serpentine seeps and sometimes streambanks within chaparral, cismontane woodland, lower montane coniferous forest and valley and foothill grassland (196' - 4,067').	February-August	Absent. No suitable habitat present onsite.
Mendocino tarplant (*Hemizonia congesta* ssp. *calyculata*)	–	–	4.3	Sometimes serpentinite substrates of cismontane woodland and valley and foothill grassland (740' – 4,595').	July-November	Absent. No suitable habitat present onsite.
Hogwallow starfish (*Hesperevax caulescens*)	–	–	4.2	Mesic, clay areas within valley and foothill grassland, and shallow vernal pools, sometimes in alkaline areas (0' - 1,657').	March-June	Absent. No suitable habitat present onsite.
Water star-grass (*Heteranthera dubia*)	–	–	2B.2	Alkaline (pH of 7 of higher), still or slow-moving, and usually slightly eutrophic waters of marshes and swamps (100' – 4,905').	July-October	Low Potential. Marginally suitable habitat present onsite. Not found during 2022 protocol surveys

Table 4.4-1. Special-Status Species Evaluated for the Project

Common Name (Scientific Name)	Status[1]			Habitat Description	Survey Period	Potential to Occur Onsite
Woolly rose-mallow (*Hibiscus lasiocarpos* var. *occidentalis*)	–	–	1B.2	Marshes and freshwater swamps. Often in riprap on sides of levees (0′ – 394′).	June-September	Low Potential. Marginally suitable habitat present onsite. Not found during 2022 protocol surveys
Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*)	–	–	1B.2	Mesic areas in valley and foothill grassland. Species has an affinity for slight disturbance such as farmed fields (USFWS 2005) (100′ – 750′).	March-May	Absent. No suitable habitat present onsite.
Del Norte pea (*Lathyrus delnorticus*)	–	–	4.3	Often on serpentinite substrates in lower montane coniferous forest and North Coast coniferous forest (100′ – 4755′).	June-July	Absent. No suitable habitat present onsite.
Colusa layia (*Layia septentrionalis*)	–	–	1B.2	Sandy or serpentinite soils in chaparral, cismontane woodland, and valley and foothill grasslands (330′ – 3,595′).	April-May	Absent. No suitable habitat present onsite.
Bristly leptosiphon (*Leptosiphon aureus*)	–	–	4.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland (180′ – 4,920′).	April-July	Absent. No suitable habitat present onsite.
Veiny monardella (Monardella venosa)	–	–	1B.1	Heavy clay soils in cismontane woodland and valley and foothill grasslands (197′ – 1,345′).	May-July	Absent. No suitable habitat present onsite.
Baker's navarretia (*Navarretia leucocephala* ssp. *bakeri*)	–	–	1B.1	Vernal pools and mesic areas within cismontane woodlands, lower montane coniferous forests, meadows and seeps, and valley and foothill grasslands (15′ – 5,710′).	April-July	Absent. No suitable habitat present onsite.

Table 4.4-1. Special-Status Species Evaluated for the Project

Common Name (Scientific Name)	Status[1]			Habitat Description	Survey Period	Potential to Occur Onsite
	FESA	CESA/ NPPA	Other			
Ahart's paronychia (*Paronychia ahartii*)	–	–	1B.1	Vernal pools within cismontane woodland, and valley/foothill grassland (98' – 1,640').	March-June	Absent. No suitable habitat present onsite.
Hartweg's Golden Sunburst *(Pseudobahia bahiifolia)*	FE	CE	1B.1	Clay, often acidic soils in cismontane woodland, valley and foothill grasslands (50'– 490').	March-April	Absent. No suitable habitat present onsite.
California alkali grass (*Puccinellia simplex*)	–	–	1B.2	Alkaline, vernally mesic areas and sinks, flats and lake margins in chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools (5' – 3,050').	March-May	Absent. No suitable habitat present onsite.
Sanford's arrowhead (*Sagittaria sanfordii*)	–	–	1B.2	Shallow marshes and freshwater swamps (0 ' – 2,135').	May-October	Potential to Occur. Suitable habitat present onsite. Not found during 2022 protocol surveys
English Peak greenbrier (*Smilax jamesii*)	–	–	4.2	Sometimes in mesic depressions or along lake margins or streambanks of broadleafed upland forest, lower montane coniferous forest, marshes and swamps, North Coast coniferous forests, and upper montane coniferous forests (505' - 1,975')	May-July	Absent. No suitable habitat present onsite.
Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*)	–	–	2B.1	Alkaline soils in meadows and seeps, marshes and swamps, riparian forest, and vernal pools (15' – 1,425').	May-September	Low Potential. Marginally suitable habitat present onsite. Not found during 2022 protocol surveys

Table 4.4-1. Special-Status Species Evaluated for the Project

Common Name (Scientific Name)	Status[1]			Habitat Description	Survey Period	Potential to Occur Onsite
Brazilian watermeal (*Wolffia brasiliensis*)	–	–	2B.3	Assorted shallow freshwater marshes and swamps (66′ – 328′).	April-December	Low Potential. Marginally suitable habitat present onsite. Not found during 2022 protocol surveys
Invertebrates						
Monarch butterfly (*Danaus plexippus*)	FC	-	-	Adult monarchs west of the Rocky Mountains typically overwinter in sheltered wooded groves of Monterey pine, Monterey cypress, and gum eucalyptus along coastal California, then disperse in spring throughout California, Nevada, Arizona, and parts of Oregon and Washington. Adults require milkweed and additional nectar sources during the breeding season. Larval caterpillars feed exclusively on milkweed.	Any season	Absent. No suitable habitat present onsite.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	–	–	Elderberry shrubs.	Any season	Absent. No suitable habitat present onsite. Not found onsite during 2022 protocol survey.
Crotch bumble bee *(Bombus crotchii)*	-	CC	-	Primarily nests underground in open grassland and scrub habitats from the California coast east to the Sierra Cascade and south to Mexico.	March-September	Absent. No suitable habitat present onsite.

Table 4.4-1. Special-Status Species Evaluated for the Project

Common Name (Scientific Name)	Status[1]			Habitat Description	Survey Period	Potential to Occur Onsite
	FESA	CESA/ NPPA	Other			
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	–	–	Vernal pools/wetlands.	November-April	Absent. No suitable habitat present onsite.
Vernal pool tadpole shrimp (*Lepidurus packardi*)	FE	–	–	Vernal pools/wetlands.	November-April	Absent. No suitable habitat present onsite.
Fish						
Green sturgeon (*Acipenser medirostris*)	FT	–	SSC	Anadromous; undammed cold-water rivers having relatively deep pools with large substrates.	N/A	Absent. No suitable habitat present onsite.
White sturgeon (*Acipenser transmontanus*)	-	-	SSC	Anadromous; undammed cold-water rivers having relatively deep pools with large substrates.	N/A	Absent. No suitable habitat present onsite.
Delta smelt (*Hypomesus transpacificus*)	FT	CE	–	Water bodies connected to the Sacramento-San Joaquin Delta.	N/A	Absent. Outside on the acknowledged range for this species.
Steelhead (CA Central Valley Distinct Population Segment [DPS]) (*Oncorhynchus mykiss*)	FT	–	–	Undammed rivers, streams, creeks.	N/A	Absent. No suitable habitat present onsite.
Chinook salmon (Central Valley spring-run Evolutionarily Significant Unit [ESU]) (*Oncorhynchus tshawytscha*)	FT	CT	–	Undammed rivers, streams, creeks.	N/A	Absent. No suitable habitat present onsite.

Table 4.4-1. Special-Status Species Evaluated for the Project

Common Name (Scientific Name)	Status[1]			Habitat Description	Survey Period	Potential to Occur Onsite
	FESA	CESA/ NPPA	Other			
Chinook salmon (Central Valley fall/late fall-run ESU) (*Oncorhynchus tshawytscha*)	-	-	SSC	Undammed rivers, streams, creeks in the Sacramento and San Joaquin River systems.	N/A	Absent. No suitable habitat present onsite.
Amphibians						
California tiger salamander (Central California DPS) (*Ambystoma californiense*)	FT	CT	CDFW WL	Vernal pools, wetlands (breeding) and adjacent grassland or oak woodland; needs underground refuge (e.g., ground squirrel and/or gopher burrows). Largely terrestrial as adults.	March-May	Absent. No suitable habitat present onsite.
Foothill yellow-legged frog (*Rana boylii*)	-	CT	SSC	Foothill yellow-legged frogs can be active all year in warmer locations, but may become inactive or hibernate in colder climates. At lower elevations, foothill yellow-legged frogs likely spend most of the year in or near streams. Adult frogs, primarily males, will gather along main-stem rivers during spring to breed.	May-October	Absent. No suitable habitat present onsite.
Western spadefoot (*Spea hammondii*)	-	-	SSC	California endemic species of vernal pools, swales, wetlands and adjacent grasslands throughout the Central Valley.	March-May	Absent. No suitable habitat present onsite.
Reptiles						
Northwestern pond turtle (*Actinemys marmorata*)	-	-	SSC	Requires basking sites and upland habitats up to 0.5 kilometer from water for egg laying. Uses ponds, streams, detention basins, and irrigation ditches.	April-September	Low Potential. Marginally suitable habitat present onsite.

Table 4.4-1. Special-Status Species Evaluated for the Project

Common Name (Scientific Name)	Status[1]			Habitat Description	Survey Period	Potential to Occur Onsite
	FESA	CESA/ NPPA	Other			
San Joaquin coachwhip (*Coluber flagellum ruddocki*)	-	-	SSC	Occurs in open, dry, usually flat habitats in Valley Grassland and Saltbush Scrub with little to no shrub cover in the San Joaquin Valley. A dietary generalist.	March-October	Absent. Outside of the acknowledged range for this species.
Giant garter snake (*Thamnophis gigas*)	FT	CT	-	Freshwater ditches, sloughs, and marshes in the Central Valley. Almost extirpated from the southern parts of its range.	April-October	Potential to occur. Suitable habitat present onsite; CNDDB records within 5 miles (CDFW 2022).
Birds						
Fulvous whistling-duck *(Dendrocygna bicolor)*	-	-	SSC	Freshwater wetlands, impoundments, rice (Imperial Valley south to Mexico)	April-September	Absent. No suitable habitat present onsite.
Aleutian cackling goose (*Branta hutchinsii leucopareia*)	De-listed	-	CDFW WL	Pasture, marsh (Sacramento/San Joaquin Valley and Delta)	October-March	Absent. No suitable habitat present onsite.

Table 4.4-1. Special-Status Species Evaluated for the Project

Common Name (Scientific Name)	Status[1]			Habitat Description	Survey Period	Potential to Occur Onsite
	FESA	CESA/ NPPA	Other			
Yellow-billed cuckoo (*Coccyzus americanus*)	FT	CE	BCC	Breeds in California, Arizona, Utah, Colorado, and Wyoming. In California, they nest along the upper Sacramento River and the South Fork Kern River from Isabella Reservoir to Canebrake Ecological Reserve. Other known nesting locations include Feather River (Butte, Yuba, Sutter counties), Prado Flood Control Basin (San Bernardino and Riverside counties), Amargosa River and Owens Valley (Inyo County), Santa Clara River (Los Angeles County), Mojave River and Colorado River (San Bernardino County). Nests in riparian woodland. Winters in South America.	June 15-August 15	Absent. No suitable habitat present onsite.
Rufous hummingbird *(Selasphorus rufus)*	-	-	BCC	Breeds in British Columbia and Alaska (does not breed in California). Winters in coastal Southern California south into Mexico. Common migrant during March-April in Sierra Nevada foothills and June-August in Lower Conifer to Alpine zone of Sierra Nevada. Nesting habitat includes secondary succession communities and openings, mature forests, parks and residential area.	April-July	Absent. No suitable habitat present onsite.

Table 4.4-1. Special-Status Species Evaluated for the Project

Common Name (Scientific Name)	Status[1]			Habitat Description	Survey Period	Potential to Occur Onsite
	FESA	CESA/ NPPA	Other			
California black rail (*Laterallus jamaicensis coturniculus*)	-	CT	BCC, CFP	Salt marsh, shallow freshwater marsh, wet meadows, and flooded grassy vegetation. In California, primarily found in coastal and Bay-Delta communities, but also in Sierran foothills (Butte, Yuba, Nevada, Placer, El Dorado counties)	March-September (breeding)	Absent. No suitable habitat present onsite.
Greater sandhill crane (*Antigone canadensis tabida*)	-	CT	CFP	Breeds in NE California, Nevada, Oregon, Washington, and BC, Canada; winters from California to Florida. In winter, they forage in burned grasslands, pastures, and feed on waste grain in a variety of agricultural settings (corn, wheat, milo, rice, oats, and barley), tilled fields, recently planted fields, alfalfa fields, row crops, and burned rice fields.	March-August (breeding); September-March (wintering)	Absent. No suitable habitat present onsite.
Mountain plover (*Charadrius montanus*)	-	-	BCC, SSC	Breeds in the Great Plains/Midwestern U.S.; winters in California, Arizona, Texas, and Mexico; wintering habitat in California includes tilled fields, heavily grazed open grassland, burned fields, and alfalfa fields.	September-March (wintering)	Absent. No suitable habitat present onsite.

Table 4.4-1. Special-Status Species Evaluated for the Project

Common Name (Scientific Name)	Status[1]			Habitat Description	Survey Period	Potential to Occur Onsite
	FESA	CESA/ NPPA	Other			
Black tern (*Chlidonias niger*)	-	-	BCC, SSC	Breeding range includes northeastern California, Central Valley, Great Plains of U.S. and Canada; winters in Central and South America; nesting habitat includes shallow freshwater marsh with emergent vegetation, prairie sloughs, lake margins, river islands, and cultivated rice fields.	May-August	Absent. No suitable habitat present onsite.
Least bittern (*Ixobrychus exilis*)	-	-	SSC	Freshwater and brackish marshes with dense, tall aquatic and semiaquatic vegetation intersperse with clumps of woody vegetation and open water, and rarely salt marshes and mangrove swamps.	April-July	Absent. No suitable habitat present onsite.
White-tailed kite (*Elanus leucurus*)	-	-	CFP	Nesting occurs within trees in low elevation grassland, agricultural, wetland, oak woodland, riparian, savannah, and urban habitats.	March-August	Low Potential. Marginal nesting habitat present onsite.

Table 4.4-1. Special-Status Species Evaluated for the Project

Common Name (Scientific Name)	Status[1]			Habitat Description	Survey Period	Potential to Occur Onsite
	FESA	CESA/ NPPA	Other			
Golden eagle (*Aquila chrysaetos*)	-	-	CFP, CDFW WL	Nesting habitat includes mountainous canyon land, rimrock terrain of open desert and grasslands, riparian, oak woodland/ savannah, and chaparral. Nesting occurs on cliff ledges, river banks, trees, and human-made structures (e.g., windmills, platforms, and transmission towers). Breeding occurs throughout California, except the immediate coast, Central Valley floor, Salton Sea region, and the Colorado River region, where they can be found during Winter.	Nest (February-August); winter CV (October-February)	Absent. No suitable habitat present onsite.
Northern harrier (*Circus hudsonius*)	-	-	BCC, SSC	Nests on the ground in open wetlands, marshy meadows, wet/lightly grazed pastures, (rarely) freshwater/brackish marshes, tundra, grasslands, prairies, croplands, desert, shrub-steppe, and (rarely) riparian woodland communities.	April-September	Absent. No suitable habitat present onsite.
Bald eagle (*Haliaeetus leucocephalus*)	-	CE	CFP	Typically nests in forested areas near large bodies of water in the northern half of California; nest in trees and rarely on cliffs; wintering habitat includes forest and woodland communities near water bodies (e.g., rivers, lakes), wetlands, flooded agricultural fields, open grasslands	February-September (nesting); October-March (wintering)	Absent. No suitable habitat present onsite.

Table 4.4-1. Special-Status Species Evaluated for the Project

Common Name (Scientific Name)	Status[1]			Habitat Description	Survey Period	Potential to Occur Onsite
	FESA	CESA/ NPPA	Other			
Swainson's hawk (*Buteo swainsoni*)	-	CT	BCC	Nesting occurs in trees in agricultural, riparian, oak woodland, scrub, and urban landscapes. Forages over grassland, agricultural lands, particularly during disking/harvesting, irrigated pastures	March-August	Low Potential. Marginal nesting habitat present onsite.
Ferruginous hawk (*Buteo regalis*)	-	-	BCC, CDFW WL	Rarely breeds in California (Lassen County); winter range includes grassland and shrubsteppe habitats from northern California (except northeast and northwest corners) south to Mexico and east to Oklahoma, Nebraska, and Texas.	September-March (wintering)	Absent. No suitable habitat present onsite.
Burrowing owl (*Athene cunicularia*)	-	-	BCC, SSC	Nests in burrows or burrow surrogates in open, treeless, areas within grassland, steppe, and desert biomes. Often with other burrowing mammals (e.g., prairie dogs, California ground squirrels). May also use human-made habitat such as agricultural fields, golf courses, cemeteries, roadside, airports, vacant urban lots, and fairgrounds.	February-August	Low Potential. Marginal nesting habitat present onsite.
Nuttall's woodpecker *(Dryobates nuttallii)*	-	-	BCC	Resident from northern California south to Baja California. Nests in tree cavities in oak woodlands and riparian woodlands.	April-July	Absent. No suitable habitat present onsite.

Table 4.4-1. Special-Status Species Evaluated for the Project

Common Name (Scientific Name)	Status[1]			Habitat Description	Survey Period	Potential to Occur Onsite
	FESA	CESA/ NPPA	Other			
American peregrine falcon *(Falco peregrinus anatum)*	Delisted	Delisted	CFP	In California, breeds in coastal region, northern California, and Sierra Nevada. Nesting habitat includes cliff ledges and human-made ledges on towers and buildings. Wintering habitat includes areas where there are large concentrations of shorebirds, waterfowl, pigeons or doves.	CA Residents nest in February-June	Absent. No suitable habitat present onsite.
Prairie falcon (*Falco mexicanus*)	-	-	CDFW WL	Found in open habitat at all elevations up to 3,350 meters (Steenhof 2020). Nests on cliffs and bluffs in arid plains and steppes; In California, nesting throughout state except northwest corner, along immediate coast, and the Central Valley floor. Winters throughout California, in open habitats, such as grasslands in Central Valley.	March-July (breeding); September-February (wintering in Central Valley)	Absent. No suitable habitat present onsite.
Least Bell's vireo (*Vireo bellii pusillus*)	FE	CE	-	In California, breeding range includes Ventura, Los Angeles, Riverside, Orange, San Diego, and San Bernardino counties, and rarely Stanislaus and Santa Clara counties. Nesting habitat includes dense, low shrubby vegetation in riparian areas, brushy fields, young second-growth woodland, scrub oak, coastal chaparral and mesquite brushland. Winters in southern Baja California Sur.	April 1-July 31	Absent. No suitable habitat present onsite.

Table 4.4-1. Special-Status Species Evaluated for the Project

Common Name (Scientific Name)	Status[1]			Habitat Description	Survey Period	Potential to Occur Onsite
	FESA	CESA/ NPPA	Other			
Yellow-billed magpie (*Pica nuttallii*)	-	-	BCC	Endemic to California; found in the Central Valley and coast range south of San Francisco Bay and north of Los Angeles County; nesting habitat includes oak savannah with large in large expanses of open ground; also found in urban parklike settings.	April-June	Absent. No suitable habitat present onsite.
Oak titmouse (*Baeolophus inornatus*)			BCC	Nests in tree cavities within dry oak or oak-pine woodland and riparian; where oaks are absent, they nest in juniper woodland, open forests (gray, Jeffrey, Coulter, pinyon pines, and Joshua tree)	March-July	Absent. No suitable habitat present onsite.
Bank swallow (*Riparia riparia*)	-	CT	-	Nests colonially along coasts, rivers, streams, lakes, reservoirs, and wetlands in vertical banks, cliffs, and bluffs in alluvial, friable soils. May also nest in sand, gravel quarries and road cuts. In California, breeding range includes northern and central California.	May-July	Absent. No suitable habitat present onsite.
Purple martin (*Progne subis*)	-	-	SSC	In California, breeds along coast range, Cascade-northern Sierra Nevada region and isolated population in Sacramento. Nesting habitat includes montane forests, Pacific lowlands with dead snags; the isolated Sacramento population nests in weep holes under elevated highways/bridges. Winters in South America.	May-August	Absent. No suitable habitat present onsite.

Table 4.4-1. Special-Status Species Evaluated for the Project

Common Name (Scientific Name)	Status[1]			Habitat Description	Survey Period	Potential to Occur Onsite
	FESA	CESA/ NPPA	Other			
Wrentit (*Chamaea fasciata*)	-	-	BCC	Coastal sage scrub, northern coastal scrub, chaparral, dense understory of riparian woodlands, riparian scrub, coyote brush and blackberry thickets, and dense thickets in suburban parks and gardens.	March-August	Absent. No suitable habitat present onsite.
Lawrence's goldfinch (*Spinus lawrencei*)	-	-	BCC	Breeds in Sierra Nevada and inner Coast Range foothills surrounding the Central Valley and the southern Coast Range to Santa Barbara County east through southern California to the Mojave Desert and Colorado Desert into the Peninsular Range. Nests in arid and open woodlands with chaparral or other brushy areas, tall annual weed fields, and a water source (e.g., small stream, pond, lake), and to a lesser extent riparian woodland, coastal scrub, evergreen forests, pinyon-juniper woodland, planted conifers, and ranches or rural residences near weedy fields and water.	March-September	Absent. No suitable habitat present onsite.
Belding's savannah sparrow (*Passerculus sandwichensis beldingi*)	-	CE	BCC	Resident coastally from Point Conception south into Baja California; coastal salt marsh	Year-round resident; nests March-August	Absent. No suitable habitat present onsite.

Table 4.4-1. Special-Status Species Evaluated for the Project

Common Name (Scientific Name)	Status[1]			Habitat Description	Survey Period	Potential to Occur Onsite
	FESA	CESA/ NPPA	Other			
Song sparrow "Modesto" (*Melospiza melodia heermanni*)	-	-	SSC	Resident in central and southwest California, including Central Valley; nests in marsh, scrub habitat	April-June	Absent. No suitable habitat present onsite.
Yellow-breasted chat (*Icteria virens*)	-	-	SSC	In California, breeds in Klamath Mountains, inner Northern Coast Range south to San Francisco Bay, locally distributed from Santa Clara County south to San Diego County Sacramento and San Joaquin valleys, along west slope of Sierra Nevada from the Feather River to Kern River, Mono, and Inyo counties. In the west, nesting habitat includes dense riparian and shrubby.	May-August	Absent. No suitable habitat present onsite.
Yellow-headed blackbird (*Xanthocephalus xanthocephalus*)	-	-	BCC, SSC	In California, breeds in the Great Basin region, along Colorado River south to Baja California, Salton Sea, Kern, Ventura, Riverside, San Diego and possibly Orange, Lake counties and locally in the Central Valley, Nests are constructed over deep water in emergent vegetation of prairie wetlands, quaking aspen parklands, mountain meadows, forest edges, large lakes.	April-July	Absent. No suitable habitat present onsite.

Table 4.4-1. Special-Status Species Evaluated for the Project

Common Name (Scientific Name)	Status[1]			Habitat Description	Survey Period	Potential to Occur Onsite
	FESA	CESA/ NPPA	Other			
Tricolored blackbird (*Agelaius tricolor*)	-	CT	BCC, SSC	Breeds locally west of Cascade-Sierra Nevada and southeastern deserts from Humboldt and Shasta counties south to San Bernardino, Riverside, and San Diego counties. Central California, Sierra Nevada foothills and Central Valley, Siskiyou, Modoc and Lassen counties. Nests colonially in freshwater marsh, blackberry bramble, milk thistle, triticale fields, weedy (mustard, mallow) fields, giant cane, safflower, stinging nettles, tamarisk, riparian scrublands and forests, fiddleneck, and fava bean fields.	March-August	Absent. No suitable habitat present onsite.
Bullock's oriole (*Icterus bullockii*)			BCC	Breeding habitat includes riparian and oak woodlands.	March-July	Absent. No suitable habitat present onsite.
Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*)	-	-	BCC, SSC	Breeds in salt marshes of San Francisco Bay; winters San Francisco south along coast to San Diego County.	March-July	Absent. No suitable habitat present onsite.

Table 4.4-1. Special-Status Species Evaluated for the Project

Common Name (Scientific Name)	Status[1]			Habitat Description	Survey Period	Potential to Occur Onsite
	FESA	CESA/ NPPA	Other			
Yellow warbler (*Setophaga petechia*)	-	-	SSC	Breeding range includes most of California, except Central Valley (isolated breeding locales on Valley floor, Stanislaus, Colusa, and Butte counties), Sierra Nevada range above tree line, and southeastern deserts. Nesting habitat includes riparian vegetation near streams and meadows. Winters in Mexico south to South America.	May-August	Absent. No suitable habitat present onsite.
Mammals						
Pallid bat (*Antrozous pallidus*)	-	-	SSC	Crevices in rocky outcrops and cliffs, caves, mines, trees (e.g., basal hollows of redwoods, cavities of oaks, exfoliating pine and oak bark, deciduous trees in riparian areas, and fruit trees in orchards). Also roosts in various human structures such as bridges, barns, porches, bat boxes, and human-occupied as well as vacant buildings.	April-September	Low Potential. Marginal roosting habitat provided by the existing bridge structure onsite.
Marysville California kangaroo rat (*Dipodomys californicus eximius*)	-	-	SSC	Known only from the Sutter Buttes area. Occurs in areas with friable soil in grass-forb stages of chaparral and valley and foothill grassland.	Any season	Absent. No suitable habitat present onsite.
Western mastiff bat (*Eumops perotis californicus*)	-	-	SSC	Primarily a cliff-dwelling species, found in similar crevices in large boulders and buildings	April-September	Absent. No suitable habitat present onsite.

Table 4.4-1. Special-Status Species Evaluated for the Project

Common Name (Scientific Name)	Status[1]			Habitat Description	Survey Period	Potential to Occur Onsite
	FESA	CESA/ NPPA	Other			
Western red bat (*Lasiurus blossevillii*)	-	-	SSC	Riparian habitat dominated by cottonwoods, oaks, sycamore and walnuts, and rarely, desert habitats. Roosts within the foliage of large shrubs and trees in the edge line of forests, rivers, cultivated fields, and urban areas.	April-September	Absent. No suitable habitat present onsite.

Status Codes[1]:

FESA	Federal Endangered Species Act
CESA	California Endangered Species Act
FE	ESA listed, Endangered.
FT	ESA listed, Threatened.
FC	Candidate for FESA listing as Threatened or Endangered
CE	CESA or NPPA listed, Endangered.
CFP	California Fully Protected Species
CC	Candidate for CESA listing as Endangered or Threatened
CT	CESA or NPPA listed, Threatened.
CDFW WL	CDFW Watch List
SSC	CDFW Species of Special Concern
BCC	USFWS Bird of Conservation Concern
1B	California Rare Plant Rank (CRPR)/Rare or Endangered in California and elsewhere.
2B	CRPR /Rare or Endangered in California, more common elsewhere.
4	CRPR /Plants of Limited Distribution - A Watch List.
0.1	Threat Rank/Seriously threatened in California (more than 80% of occurrences threatened / high degree and immediacy of threat)
0.2	Threat Rank/Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3	Threat Rank/Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)
Delisted	Formally Delisted

Special-Status Plants

Twenty-eight special-status plant species were identified as having the potential to occur within the Study Area based on the database queries and literature review. However, upon further analysis and after the site visit, 22 species were determined to be absent from the Study Area due to the lack of suitable habitat present or the Study Area is outside the elevation range for the species. No further discussion of these species is provided in this analysis. Brief descriptions of the remaining six species that have the potential to occur within the Study Area are presented below.

Parry's Rough Tarplant

Parry's rough tarplant (*Centromadia parryi* ssp. *rudis*) is not listed pursuant to either the federal or California ESAs but is designated as a CRPR 4.2 species. This species is an herbaceous annual that occurs in vernal pools and valley and foothill grassland with alkaline and vernally mesic soils, seeps, and sometimes roadsides. Parry's rough tarplant blooms from May through October and is known to occur at elevations ranging from sea level to 328 feet above MSL. Parry's rough tarplant is endemic to California; its current range includes Butte, Colusa, Glenn, Lake, Merced, Modoc, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, and Yolo counties (CNPS 2022).

No CNDDB occurrences of Parry's rough tarplant have been reported within 5 miles of the Study Area (CDFW 2022); however, the roadsides within the Study Area provide marginally suitable habitat for this species. Parry's rough tarplant has low potential to occur onsite. This species was not found during 2022 protocol special-status plants surveys.

Water Star-Grass

Water star-grass (*Heteranthera dubia*) is not listed pursuant to either the federal or California ESAs but is designated as a CRPR 2B.2 species. This species is an aquatic herbaceous perennial that requires a pH of 7 or higher, usually in slightly eutrophic waters, alkaline, still, or slow-moving water marshes and swamps. Water star-grass blooms from July through October and is known to occur from 100 to 4,905 feet above MSL. The current range of this species includes Butte, Colusa, Modoc, Marin, San Francisco, Shasta, San Mateo, and Sutter counties (CNPS 2022).

No CNDDB occurrences of water star-grass have been reported within 5 miles of the Study Area (CDFW 2022); however, the rip-rap on the sides of Live Oak Canal within the Study Area provide marginally suitable habitat for this species. Water star-grass has low potential to occur onsite. This species was not found during 2022 protocol special-status plants surveys.

Woolly Rose-Mallow

Woolly rose-mallow (*Hibiscus lasiocarpos* var. *occidentalis*) is not listed pursuant to either the federal or California ESAs but is designated as a CRPR 1B.2 species. This species is a rhizomatous, herbaceous perennial that occurs in marshes and freshwater swamps, and often in riprap on sides of levees. Woolly rose-mallow blooms from June through September and is known to occur at elevations ranging from sea level to 395 feet above MSL. Woolly rose-mallow is endemic to California; the current range of this species in California includes Butte, Contra Costa, Colusa, Glenn, Sacramento, San Joaquin, Solano, Sutter, and Yolo counties (CNPS 2022).

No CNDDB occurrences of wooly rose-mallow have been reported within 5 miles of the Study Area (CDFW 2022); however, the rip-rap on the sides of Live Oak Canal within the Study Area provide marginally suitable habitat for this species. Woolly rose-mallow has low potential to occur onsite. This species was not found during 2022 protocol special-status plants surveys.

Sanford's Arrowhead

Sanford's arrowhead (*Sagittaria sanfordii*) is not listed pursuant to the federal or California ESAs but is designated as a CRPR 1B.2 species. This species is a perennial rhizomatous herb that occurs in shallow, freshwater marshes and swamps. Sanford's arrowhead blooms from May through October and is known to occur at elevations ranging from sea level to 2,135 feet above MSL. Sanford's arrowhead is endemic to California; the current range of this species includes Butte, Del Norte, El Dorado, Fresno, Madera, Marin, Mariposa, Merced, Napa, Sacramento, San Bernardino, San Joaquin, Shasta, Solano, Sutter, Tehama, Tulare, Ventura, and Yuba counties; it is presumed extirpated in Ventura County (CNPS 2022).

No CNDDB occurrences of Sanford's arrowhead have been reported within 5 miles of the Study Area (CDFW 2022); however, Live Oak Canal within the Study Area provides suitable habitat for this species. Sanford's arrowhead has potential to occur onsite. This species was not found during 2022 protocol special-status plants surveys.

Wright's Trichocoronis

Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*) is not listed pursuant to either the federal or California ESAs but is designated as a CRPR 2B.1 species. This species is an herbaceous annual that occurs on alkaline soils in meadows and seeps, marshes and swamps, riparian forest, and vernal pools. Wright's trichocoronis blooms from May through September and is known to occur at elevations ranging from 15 to 1,425 feet above MSL. The current range for this species in California includes Colusa, Merced, Riverside, San Joaquin, and Sutter counties. It is believed to be extirpated from Colusa and San Joaquin counties (CNPS 2022).

No CNDDB occurrences of Wright's trichocoronis have been reported within 5 miles of the Study Area (CDFW 2022); however, Live Oak Canal within the Study Area provides marginally suitable habitat for this species. Wright's trichocoronis has low potential to occur onsite. This species was not found during 2022 protocol special-status plants surveys.

Brazilian Watermeal

Brazilian watermeal (*Wolffia brasiliensis*) is not listed pursuant to either the federal or California ESA but is designated as a CRPR 2B.3 species. This species is an aquatic herbaceous perennial that occurs in assorted shallow freshwater marshes and swamps. Brazilian watermeal blooms from April through December and is known to occur at elevations ranging from 65 to 330 feet above MSL. The current range for Brazilian watermeal in California includes Butte, Glenn, Shasta, Stanislaus, Sutter, and Yuba counties (CNPS 2022).

No CNDDB occurrences of Brazilian watermeal have been reported within 5 miles of the Study Area (CDFW 2022); however, Live Oak Canal within the Study Area provides marginally suitable habitat for this species. Brazilian watermeal has low potential to occur onsite. This species was not found during 2022 protocol special-status plants surveys.

Invertebrates

Five special-status invertebrate species were identified as having potential to occur within the Study Area based on the database queries and literature review. However, upon further analysis and after the site

visit, all species were determined to be absent from the Study Area due to the lack of suitable habitat. No further discussion of these species is provided in this analysis.

Fish

Six special-status fish species were identified as having the potential to occur within the Study Area based on the database queries and literature review. However, upon further analysis and after the site visit, all species were determined to be absent from the Study Area due to the lack of suitable habitat. No further discussion of these species is provided in this analysis.

Amphibians

Three special-status amphibians were identified as having potential to occur within the Study Area based on the database queries and literature review. However, upon further analysis and after the site visit, all species were determined to be absent from the Study Area due to the lack of suitable habitat. No further discussion of these species is provided in this analysis.

Reptiles

Three special-status reptile species were identified as having potential to occur within the Study Area based on the database queries and literature review. However, upon further analysis and after the site visit, San Joaquin coachwhip (*Coluber flagellum* ssp. *ruddocki*) was determined to be absent from the Study Area due being outside of the known range of the species. No further discussion of this species is provided in this analysis. Brief descriptions of the remaining two species that have the potential to occur within the Study Area are presented below.

Northwestern Pond Turtle

The northwestern pond turtle (*Actinemys marmorata*) is not listed pursuant to either the California or federal ESAs; however, it is designated a SSC by CDFW. The range of the northwestern pond turtle in California extends from the Oregon border southward to the Stockton area in the Central Valley, and the western slope of the Sierra-Cascade (Bury et al. 2012a). The elevational range extends from sea level to 2,000 meters, but it becomes rare at the higher elevations (Stebbins 2003).

Northwestern pond turtles can occur in a variety of waters including ponds, lakes, streams, reservoirs, rivers, settling ponds of wastewater treatment plants, and other permanent and ephemeral wetlands (Bury et al. 2012b). However, in streams and other lotic features they generally require slack- or slow-water aquatic microhabitats (Thomson et al. 2016). Northwestern pond turtles also require basking areas such as logs, rocks, banks, and brush piles for thermoregulation (Bury et al. 2012b).

Northwestern pond turtles are typically active between March or April through October or November, the timing of which depends on variables such as latitude, elevation, and local climate (Bury et al. 2012b). Courtship and mating typically occur during late April and early May, but could occur throughout summer and into fall (Bury et al. 2012b). Suitable nest sites are usually 5 to 500 meters upland from water in areas with short grasses and forbs (Bury et al. 2012b). Additionally, nesting sites are typically south- or west-facing in direct sunlight with soils that have a high silt or clay component (Rathbun et al. 1992, 2002).

Hatchling northwestern pond turtles usually overwinter in nests (Reese and Welsh 1997) while adults overwinter on land or in the water depending on specific location and habitat (Bury et al. 2012b).

No CNDDB occurrences of northwestern pond turtle have been reported within 5 miles of the Study Area (CDFW 2022). Live Oak Canal mapped within the Study Area provides marginal suitable habitat for this species. Northwestern pond turtle has low potential to occur onsite.

Giant Garter Snake

The giant garter snake (*Thamnophis gigas*) is listed as a threatened species pursuant to both the California and federal ESAs. Giant garter snakes typically inhabit perennial ponds, marshes, slow-moving streams, and agricultural ditches containing adequate water during the spring and summer months. Giant garter snakes are most active from early spring through mid-fall (USFWS 1999). The giant garter snake is endemic to the floors of the Sacramento and San Joaquin valleys of California and probably occurred historically from Butte County south to Buena Vista Lake in Kern County (USFWS 1999). The giant garter snake is one of the most aquatic garter snakes (USFWS 1999). It is rarely found far from water and occupies habitat such as marshes and sloughs, irrigation and drainage canals, small lakes and ponds, rice agricultural fields, and low-gradient streams (USFWS 1999). Waters inhabited by this species typically feature substrates of soil, mud, or other fines. Giant garter snakes tend to be absent from larger rivers and wetlands with sand, gravel, cobble, or rock substrates, as well as from areas with extensive shading.

Small mammal burrows, crayfish burrows, and soil cracks on south- or west-facing slopes are used as retreats during the active season, as is riprap along drainage ditches and canals (USFWS 1999). Giant garter snakes use grassy bank-side habitats for basking and use higher elevation uplands for cover and retreat from floodwaters during the inactive winter season (USFWS 1999). Essential habitat components required are permanent water to support a sufficient prey base, emergent vegetation for escape cover and foraging habitat, near-bank upland habitat for basking, and higher-elevation habitats for winter refugia (USFWS 1999 and references therein). Networks of canals near rice agriculture (aquatic agriculture) are positively associated with giant garter snake presence, however, population density and body condition are lower in rice agriculture than in natural landscapes (Halstead et al. 2010).

Seasonally, the giant garter snake becomes active in early spring, emerging from overwintering sites to bask on emergent willows, tules, saltbush, and riprap (Hansen and Tremper in Rossman et al. 1996). Generally, by May, all giant garter snakes have emerged from hibernacula and are actively foraging for food. Live young are born in late July through early September (Hansen and Hansen 1990) and by October, most snakes begin searching for overwintering sites. Most are in hibernacula by November (Hansen and Hansen 1990). As with most ectothermic vertebrates, the exact timing of activities is dependent on current climatic conditions.

Three CNDDB occurrences of giant garter snake have been reported within 5 miles of the Study Area (CDFW 2022). Live Oak Canal within the Study Area provides suitable habitat for this species. Giant garter snake has potential to occur onsite.

Birds

Thirty-seven special-status bird species were identified as having potential to occur within the Study Area based on the database queries and literature review. Upon further analysis and after the reconnaissance site visit, 34 species were considered to be absent from the Study Area due to the lack of suitable habitat. No further discussion of these species is provided in this analysis. Brief descriptions of the remaining three special-status bird species that have the potential to occur within the Study Area are presented below.

White-Tailed Kite

White-tailed kite (*Elanus leucurus*) is not listed pursuant to either the California or federal ESAs; however, the species is fully protected pursuant to Section 3511 of the California Fish and Game Code. This species is a common resident in the Central Valley and the entire length of the California coast, and all areas up to the Sierra Nevada foothills and southeastern deserts (Dunk 2020). In northern California, white-tailed kite nesting occurs from March through early August, with nesting activity peaking from March through June. Nesting occurs in trees within riparian, oak woodland, savannah, and agricultural communities that are near foraging areas such as low elevation grasslands, agricultural, meadows, farmlands, savannahs, and emergent wetlands (Dunk 2020).

No CNDDB occurrences of white-tailed kite have been reported within 5 miles of the Study Area (CDFW 2022); however, trees along Live Oak Canal within the Study Area provides marginally suitable nesting habitat for this species. White-tailed kite has low potential to occur onsite.

Swainson's Hawk

Swainson's hawk (*Buteo swainsoni*) is listed as a threatened species and is protected pursuant to the California ESA. This species nests in North America (Canada, western U.S., and Mexico) and typically winters from South America north to Mexico. However, a small population has been observed wintering in the Sacramento-San Joaquin River Delta (Bechard et al. 2020). In California, the nesting season for Swainson's hawk ranges from mid-March to late August.

Swainson's hawks nest within tall trees in a variety of wooded communities including riparian, oak woodland, roadside landscape corridors, urban areas, and agricultural areas, among others. Foraging habitat includes open grassland, savannah, low-cover row crop fields, and livestock pastures. In the Central Valley, Swainson's hawks typically feed on a combination of California vole (*Microtus californicus*), California ground squirrel (*Spermophilus beecheyi*), ring-necked pheasant (*Phasianus colchicus*), many passerine birds, and grasshoppers (*Melanopulus* sp.). Swainson's hawks are opportunistic foragers and will readily forage in association with agricultural mowing, harvesting, discing, and irrigating (Estep 1989). The removal of vegetative cover by such farming activities results in more readily available prey items for this species.

Four CNDDB occurrences of Swainson's hawk have been reported within 5 miles of the Study Area (CDFW 2022). The trees along Live Oak Canal within the Study Area provide marginally suitable habitat for this species. Swainson's hawk has low potential to nest within the Study Area. There is no suitable foraging habitat onsite or in the immediate vicinity.

Burrowing Owl

Burrowing owl (*Athene cunicularia*) is not listed pursuant to either the California or federal ESAs; however, it is designated as a BCC by the USFWS and a SSC by the CDFW. Burrowing owls inhabit dry open rolling hills, grasslands, desert floors, and open bare ground with gullies and arroyos. They can also inhabit developed areas such as golf courses, cemeteries, roadsides within cities, airports, vacant lots in residential areas, school campuses, and fairgrounds (Poulin et al. 2020). This species typically uses burrows created by fossorial mammals, most notably the California ground squirrel (*Spermophilus beecheyi*) but may also use human-made structures such as concrete culverts or pipes; concrete, asphalt, or wood debris piles; or openings beneath concrete or asphalt pavement (CDFW 2012). The breeding season typically occurs between February 1 and August 31 (California Burrowing Owl Consortium 1993; CDFW 2012).

There are no CNDDB occurrences of the burrowing owl reported within 5 miles of the Study Area (CDFW 2022). Potential burrows were found along the terrace of Live Oak Canal. Burrowing owl has low potential to occur within the Study Area.

Mammals

Four special-status mammal species were identified as having potential to occur within the Study Area based on the literature review. Upon further analysis and after the reconnaissance site visit, three species were considered to be absent from the Study Area due to the lack of suitable habitat. No further discussion of these species is provided in this analysis. A brief description of the remaining special-status mammal species that has the potential to occur within the Study Area is presented below.

Pallid Bat

Pallid bat (*Antrozous pallidus*) is not listed pursuant to either the federal or California ESAs; however, this species is considered a SSC by CDFW. The pallid bat is a large, light-colored bat with long, prominent ears and pink, brown, or grey wing and tail membranes. This species ranges throughout North America from the interior of British Columbia, south to Mexico, and east to Texas. The pallid bat inhabits low elevation (below 6,000 feet) rocky arid deserts and canyonlands, shrub-steppe grasslands, karst formations, and higher elevation coniferous forest (above 7,000 feet). This species roosts alone or in groups in the crevices of rocky outcrops and cliffs, caves, mines, trees, and in various human-made structures such as bridges and barns. Pallid bats are feeding generalists that glean a variety of arthropod prey from surfaces as well as capturing insects on the wing. Foraging occurs over grasslands, oak savannahs, ponderosa pine forests, talus slopes, gravel roads, lava flows, fruit orchards, and vineyards. Although this species utilizes echolocation to locate prey, they often use only passive acoustic cues. This species is not thought to migrate long distances between summer and winter sites (Western Bat Working Group 2021).

No CNDDB occurrences of pallid bat has been reported within 5 miles of the Study Area (CDFW 2022). During the site reconnaissance, cliff swallow nests were observed under the bridge of Live Oak Canal. If no other roosting habitat are present, pallid bats are known to roost in cliff swallow nests (California Bat Working Group 2022). Pallid bat has low-potential to occur within the Study Area.

4.4.2.6 Wildlife Movement Corridors

The concept of habitat corridors addresses the linkage between large blocks of habitat that allow safe movement for mammals and other wildlife species from one habitat area to another. The definition of a corridor is varied, but corridors may include areas such as greenbelts, refuges, underpasses, riparian areas, creeks, and biogeographic land bridges. In general, a corridor can be described as a linear habitat embedded within a dissimilar matrix that connects two or more larger blocks of habitat.

The Study Area does not occur within an Essential Habitat Connectivity area mapped by CDFW (CDFW 2022). Live Oak Canal provides marginal habitat for some wildlife species, but it is constrained by agricultural land use and roads, which does not provide a quality movement corridor for wildlife.

4.4.2.7 Essential Fish Habitat and Critical Habitat

The Study Area is located within 5 miles of ESA Critical Habitat for California Central Valley steelhead chinook salmon and green sturgeon (NOAA 2022b). The Study Area is located within designated Essential Fish Habitat for Chinook Salmon: Honcut Headwaters-Lower Feather - Below Watershed (NOAA 2022c). However, Live Oak Canal mapped within the Study Area does not support habitat for Chinook salmon, California Central Valley steelhead, or green sturgeon.

4.4.2.8 Sensitive Natural Communities

Northern Hardpan Vernal Pool was identified as a sensitive natural community having potential to occur within the Study Area based on the literature review (CDFW 2022). Based on site reconnaissance connected by ECORP, no sensitive natural communities were identified within the Study Area.

4.4.3 Regulatory Setting

4.4.3.1 Federal

Federal Endangered Species Act

The ESA protects plants and animals that are listed as endangered or threatened by the USFWS and the National Marine Fisheries Service (NMFS). Section 9 of ESA prohibits the taking of listed wildlife, where take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant on federal land and removing, cutting, digging up, damaging, or destroying any listed plant on non-federal land in knowing violation of state law (16 U.S. Code [USC] 1538). Under Section 7 of ESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect a listed (or proposed) species (including plants) or its critical habitat. Through consultation and the issuance of a Biological Opinion (BO), the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity provided the activity will not jeopardize the continued existence of the species. Section 10 of the ESA provides for issuance of incidental take permits where no other federal actions are necessary provided a Habitat Conservation Plan (HCP) is developed.

Section 7

Section 7 of ESA mandates that all federal agencies consult with USFWS and/or NMFS to ensure that federal agencies' actions do not jeopardize the continued existence of a listed species or adversely modify critical habitat for listed species. The adverse modifications will require formal consultation with USFWS or NMFS if direct and/or indirect effects will occur to critical habitat that appreciably diminish the value of critical habitat for both the survival and recovery of a species. The applicant must conduct a Biological Assessment (BA) for the purpose of analyzing the potential effects of the project on listed species and critical habitat to establish and justify an "effect determination." if adverse effects are likely. The federal agency reviews the BA and prepares a BO if it concludes that the project may adversely affect a listed species or its habitat. The BO may recommend *reasonable and prudent alternatives* to the project to avoid jeopardizing or adversely modifying habitat.

Critical Habitat and Essential Habitat

Critical Habitat is defined in Section 3 of ESA as:

1. the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the ESA, on which are found those physical or biological features essential to the conservation of the species and that may require special management considerations or protection; and

2. specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

For inclusion in a Critical Habitat designation, habitat within the geographical area occupied by the species at the time it was listed must first have features that are essential to the conservation of the species. Critical Habitat designations identify, to the extent known and using the best scientific data available, habitat areas that provide Primary Physical and Biological Features (PPBFs). PPBFs are the physical and biological features that are essential to the conservation of the species and that may require special management considerations or protection. These include but are not limited to the following:

- Space for individual and population growth and for normal behavior.
- Food, water, air, light, minerals, or other nutritional or physiological requirements.
- Cover or shelter.
- Sites for breeding, reproduction, or rearing (or development) of offspring.
- Habitats that are protected from disturbance or are representative of the historic, geographical, and ecological distributions of a species.

Excluded essential habitat is defined as areas that were found to be essential habitat for the survival of a species and assumed to contain at least one of the primary constituent elements for the species but were excluded from the Critical Habitat designation. The USFWS has stated that any action within the excluded essential habitat that triggers a federal nexus will be required to undergo the Section 7(a)(1) process, and

the species covered under the specific Critical Habitat designation would be afforded protection under Section 7(a)(2) of ESA.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the U.S. and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the California Fish and Game Code.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act of 1940 (as amended) provides for the protection of bald eagle and golden eagle 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 [16 USC 668(a); 50 CFR 22]. The USFWS may authorize take of bald eagles and golden eagles for activities where the take is associated with, but not the purpose of, the activity and cannot practicably be avoided (50 CFR 22.26).

Federal Clean Water Act

The purpose of the federal Clean Water Act (CWA) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into Waters of the U.S. without a permit from the U.S. Army Corps of Engineers (USACE). The definition of Waters of the U.S. includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas:

> "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3 7b).

The USEPA also has authority over wetlands and may override a USACE permit.

Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the RWQCB.

4.4.3.2 State

California Fish and Game Code

California Endangered Species Act

The California ESA (California Fish and Game Code Sections 2050-2116) generally parallels the main provisions of the federal ESA, but unlike its federal counterpart, the California ESA applies the take prohibitions to species proposed for listing (called *candidates* by the state). Section 2080 of the California Fish and Game Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. *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." The California ESA allows for take incidental to otherwise lawful development projects. State lead agencies are required to consult with the CDFW to ensure that any action they undertake is not likely to jeopardize the continued existence of any endangered, threatened or candidate species or result in destruction or adverse modification of essential habitat.

Fully Protected Species

The State of California first began to designate species as *fully protected* prior to the creation of the federal and California ESAs. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have subsequently been listed as threatened or endangered under the state and/or federal ESAs. The regulations that implement the Fully Protected Species Statute (California Fish and Game Code Section 4700 for mammals, Section 3511 for birds, Section 5050 for reptiles and amphibians, and Section 5515 for fish) provide that fully protected species may not be taken or possessed at any time. Furthermore, CDFW prohibits any state agency from issuing incidental take permits for fully protected species. The CDFW will issue licenses or permits for take of these species for necessary scientific research or live capture and relocation pursuant to the permit.

Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 was created with the intent to "preserve, protect and enhance rare and endangered plants in this State." The NPPA is administered by CDFW and provided in California Fish and Game Code Sections 1900-1913. The Fish and Wildlife Commission has the authority to designate native plants as *endangered* or *rare* and to protect endangered and rare plants from take. The California ESA of 1984 (California Fish and Game Code Sections 2050-2116) provided further protection for rare and endangered plant species, but the NPPA remains part of the California Fish and Game Code.

Protected Birds

Sections 3800, 3513, and 3503 of the California Fish and Game Code specifically protect birds. Section 3800 states that it is unlawful to take nongame birds, such as those occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds, except when in accordance with regulations of the commission or a mitigation plan approved by CDFW for mining operations.

Section 3513 specifically prohibits the take or possession of any migratory nongame bird as designated in the MBTA.

Section 3503 of the California Fish and Game Code prohibits the take, possession, or needless destruction of the nest or eggs of any bird. Additionally, Subsection 3503.5 prohibits the take, possession, or destruction of any birds and their nests in the orders Strigiformes (owls) or Falconiformes (hawks and eagles). These provisions, along with the federal MBTA, serve to protect nesting raptors.

California Streambed Alteration Notification/Agreement

Section 1602 of the California Fish and Game Code requires that a Streambed Alteration Application (SAA) be submitted to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." CDFW reviews the proposed actions and, if necessary, submits proposed measures to protect affected fish and wildlife resources to the applicant. The SAA is the final proposal mutually agreed upon by CDFW and the Applicant. Projects that require an SAA often also require a permit from the USACE under Section 404 of the CWA. The conditions of the Section 404 permit and the SAA overlap in these instances.

Species of Special Concern

The CDFW defines SSC as a species, subspecies, or distinct population of an animal native to California that are not legally protected under ESA, the California ESA, or the California Fish and Game Code but currently satisfy one or more of the following criteria:

- The species has been completely extirpated from the state or, as in the case of birds, it has been extirpated from its primary seasonal or breeding role.
- The species is listed as federally (but not state) threatened or endangered, or meets the state definition of threatened or endangered but has not formally been listed.
- The species has or is experiencing serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status.
- The species has naturally small populations that exhibit high susceptibility to risk from any factor that if realized, could lead to declines that would qualify it for state threatened or endangered status.
- The SSC are typically associated with threatened habitats. Project-related impacts to SSC and state threatened or endangered species are considered significant under CEQA.

California Rare Plant Ranks

The CNPS maintains the Inventory of Rare and Endangered Plants of California (CNPS 2022), which provides a list of plant species native to California that are threatened with extinction, have limited distributions, or low populations. Plant species meeting one of these criteria are assigned to one of six CRPRs. The rank system was developed in collaboration with government, academia, nongovernmental

organizations, and private sector botanists, and is jointly managed by CDFW and the CNPS. The CRPRs are currently recognized in the CNDDB. The following are definitions of the CNPS CRPRs:

- Rare Plant Rank 1A – presumed extirpated in California and either rare or extinct elsewhere.
- Rare Plant Rank 1B – rare, threatened, or endangered in California and elsewhere.
- Rare Plant Rank 2A – presumed extirpated in California, but more common elsewhere.
- Rare Plant Rank 2B – rare, threatened, or endangered in California but more common elsewhere.
- Rare Plant Rank 3 – a review list of plants about which more information is needed.
- Rare Plant Rank 4 – a watch list of plants of limited distribution.

Additionally, the CNPS has defined Threat Ranks that are added to the CRPR as an extension. Threat Ranks designate the level of threat on a scale of 1 through 3, with 1 being the most threatened and 3 being the least threatened. Threat Ranks are generally present for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California), and some species ranked 3, which lack threat information, do not typically have a Threat Rank extension. The following are definitions of the CNPS Threat Ranks:

- Threat Rank 0.1 – Seriously threatened in California (more than 80 percent of occurrences threatened/high degree and immediacy of threat).
- Threat Rank 0.2 – Moderately threatened in California (20 to 80 percent of occurrences threatened/moderate degree and immediacy of threat).
- Threat Rank 0.3 – Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known).

Factors such as habitat vulnerability and specificity, distribution, and condition of occurrences are considered in setting the Threat Rank; differences in Threat Ranks do not constitute additional or different protection (CNPS 2022). Depending on the policy of the lead agency, substantial impacts to plants ranked 1A, 1B, or 2 are typically considered significant under CEQA Guidelines Section 15380. Significance under CEQA is typically evaluated on a case-by-case basis for plants ranked 3 or 4.

Porter-Cologne Water Quality Act

The RWQCB implements water quality regulations under the federal CWA and the Porter-Cologne Water Quality Act. These regulations require compliance with the NPDES, including compliance with the California Stormwater NPDES General Construction Permit for discharges of stormwater runoff associated with construction activities. General Construction Permits for projects that disturb one or more acres of land require development and implementation of a Stormwater Pollution Prevention Plan. Under the Porter-Cologne Water Quality Act, the RWQCB regulates actions that would involve "discharging waste, or proposing to discharge waste, with any region that could affect the water of the state" (Water Code 13260(a)). Waters of the State are defined as "any surface water or groundwater, including saline waters,

within the boundaries of the state" (Water Code 13050 (e)). The RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into Waters of the State, that are not regulated by the USACE due to a lack of connectivity with a navigable water body. The RWQCB may require issuance of Waste Discharge Requirements for these activities.

California Environmental Quality Act

Per CEQA Guidelines Section 15380, a species not protected on a federal or state list may be considered rare or endangered if the species meets certain specified criteria. These criteria follow the definitions in the federal and California ESAs, and Sections 1900-1913 of the California Fish and Game Code, which deal with rare or endangered plants or animals. Section 15380 was included in the CEQA Guidelines primarily to deal with situations where a project under review may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW.

California Environmental Quality Act Significance Criteria

Sections 15063-15065 of the CEQA Guidelines address how an impact is identified as significant and are particularly relevant to SSC. Generally, impacts to listed (rare, threatened, or endangered) species are considered significant and require lead agencies to prepare an Environmental Impact Report to thoroughly analyze and evaluate the impacts. Assessment of "impact significance" to populations of nonlisted species (e.g., SSC) usually considers the proportion of the species' range that will be affected by a project, impacts to habitat, and the regional and population level effects.

Specifically, Section 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. Impacts to biological resources would normally be considered significant if a project would:

- 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 CDFW or USFWS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS;
- have a substantial adverse effect on federally protected Waters of the U.S. including wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means;
- 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;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

- conflict with the provisions of an adopted HCP, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish or result in the loss of an important biological resource, or those that would obviously conflict with local, state, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant according to CEQA because although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population-wide or region-wide basis.

4.4.4 Biological Resources (IV) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐

Less than Significant with Mitigation Incorporated.

4.4.4.1 Special-Status Plants

A determinate protocol-level survey for special-status plants in the Study Area was conducted in conjunction with the site reconnaissance (ECORP 2022d, Appendix D). No special-status plants were found during the survey. Construction is anticipated to begin in Spring 2024, which is less than two years following the site reconnaissance date of August 1, 2022. However, if construction does not occur within two years of the special-status plant survey, Mitigation Measure BIO-1 shall be implemented to reduce potential impacts to special-status plants to less than significant.

4.4.4.2 Special-Status Reptiles

Northwestern Pond Turtle

The Study Area contains potential habitat for northwestern pond turtle. Mitigation Measure BIO-2 shall be implemented to ensure that potential impacts to this species as a result of Project construction are less than significant.

Giant Garter Snake

The Study Area contains potential habitat for giant garter snake. Mitigation Measure BIO-3 shall be implemented to ensure that potential impacts to this species as a result of Project construction are less than significant.

4.4.4.3 Special-Status Birds

The Study Area supports potential nesting habitat for three special-status birds, including raptors, and other common birds protected under the MBTA. Prior to ground-disturbing activities, Mitigation Measure BIO-4 shall be implemented to mitigated potential impacts to special-status birds to less than significant.

4.4.4.4 Special-Status Mammals

The Study Area supports potential roosting habitat for the special-status pallid bat. Prior to ground-disturbing activities, Mitigation Measure BIO-5 shall be implemented to reduce potential impacts to pallid bats to less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒

No Impact.

Based on site reconnaissance conducted by ECORP, no sensitive natural communities were identified within the Study Area. There would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☒	☐	☐

Less than Significant with Mitigation Incorporated.

A total of 0.637 acre of potential Waters of the U.S./State has been delineated within the Study Area (Figure 4.4-3). Mitigation Measure BIO-6 shall be implemented prior to Project construction in order to reduce potential impacts to less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒

No Impact.

The Study Area does not occur within an Essential Habitat Connectivity area mapped by CDFW (CDFW 2022). Live Oak Canal provides marginal habitat for some wildlife species, but it is constrained by agricultural land use and roads, which does not provide a quality movement corridor for wildlife. There is no suitable habitat for fish on site. There would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒

No Impact.

The Project would replace an existing bridge with one of similar size and function. The Project would not remove any trees or conflict with any local policies. There would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

No Impact.

The Project site is not within an area governed by a conservation plan. There would be no impact.

4.4.5 Mitigation Measures

BIO-1: Special-Status Plants Protocol

If initiation of construction does not occur within two years of the special-status plant survey (August 2022), the following measures shall be implemented:

- A qualified biologist shall perform floristic plant surveys according to USFWS, CDFW, and CNPS protocols prior to construction, timed according to the appropriate phenological stage for identifying target species. Known reference populations shall be visited or local herbaria records shall be reviewed, if available, prior to surveys to confirm the phenological stage of the target species. If no special-status plants are found within the Project site, no further measures pertaining to special-status plants are necessary.
- If special-status plants are identified within 25 feet of the Project impact area, the following avoidance and mitigation measures shall be required:
  - If avoidance of special-status plants is feasible, establish and clearly demarcate avoidance zones for special-status plant occurrences prior to construction. Avoidance zones shall include the extent of the special-status plants plus a 25-foot buffer, unless otherwise determined by a qualified biologist, and shall be maintained until the completion of construction. A qualified biologist/biological monitor shall be present if work must occur within the avoidance buffer to ensure special-status plants are not impacted by the work.
  - If avoidance of special-status plants is not feasible, mitigate for significant impacts to special-status plants. The measures shall be developed in consultation with CDFW. The avoidance and mitigation measures may include permanent preservation of onsite or offsite habitat for special-status plants or translocation of plants or seeds from impacted areas to unaffected habitats.

BIO-2: Northwestern Pond Turtle Surveys

The following measures shall be implemented prior to initiation of Project construction:

- Preconstruction surveys shall be conducted within 48 hours prior to the start of construction.
- If no northwestern pond turtles are found, no further measures pertaining to this species are necessary.
- If northwestern pond turtles are found within an area proposed for impact, a qualified biologist shall relocate the animal to a suitable location away from the proposed work area, in consultation with CDFW.

BIO-3: Giant Garter Snake Protocol

The following measures shall be implemented prior to initiation of Project construction:

- Conduct an assessment for giant garter snake habitat as described in the Draft Recovery Plan for the Giant Garter Snake (USFWS 1999). If giant garter snake habitat is absent from the Study Area, and CDFW and USFWS concur with the assessment, no further measures pertaining to this species are necessary.
- If the Study Area supports giant garter snake habitat, Project-related impacts to that habitat shall be avoided, and avoidance measures shall be developed in consultation with USFWS and CDFW.
- If proposed impacts to giant garter snake habitat are unavoidable, minimization or avoidance measures shall be developed in consultation with USFWS and incidental take authorization obtained pursuant to the federal ESA Section 7 or Section 10. In addition, a CDFW Incidental Take Permit shall be obtained pursuant to California ESA Section 2081.

BIO-4: Nesting Birds Surveys

The following measures shall be implemented prior to ground-disturbing activities:

- A qualified biologist shall conduct a preconstruction survey for nesting raptors, within the Study Area and a 500-foot buffer, within 14 days of commencement of Project activities (can be conducted concurrently with nesting bird surveys, as appropriate). If an active nest is located, a no-disturbance buffer shall be established as determined by the biologist in consultation with CDFW and maintained until a qualified biologist determines the young have fledged and are no longer reliant upon the nest for survival.
- A qualified biologist shall conduct a preconstruction nesting bird (non-raptor) survey (can be conducted concurrently with raptor surveys, as appropriate) of all areas associated with construction activities, and a 100-foot buffer around these areas, within 14 days prior to commencement of construction. If active nests are found, a no-disturbance buffer around the nest shall be established. The buffer distance shall be established by a qualified biologist in consultation with the CDFW. The buffer shall be maintained until the fledglings are capable of flight and become independent of the nest, to be determined by a qualified biologist. Once the young are independent of the nest, no further measures are necessary.
- The construction contractor may knock down inactive nests (without eggs or fledglings) as determined by a qualified biologist.

BIO-5: Roosting Bats Surveys

The following measures shall be implemented prior to ground-disturbing activities:

- A qualified biologist shall survey for suitable roosting habitat within the Project impact limits prior to Project activities that may impact potential bat roosting habitat (e.g., removal of manmade structures or trees). If suitable roosting habitat is not identified, no further measures are necessary.

- If suitable roosting habitat is identified, a qualified biologist shall conduct an evening bat emergence survey that may include acoustic monitoring to determine whether or not bats are present within one week prior to construction. If roosting bats are determined to be present within the Study Area, consultation with CDFW prior to initiation of construction activities or preparation of a Bat Management Plan outlining avoidance and minimization measures specific to the potentially affected roost(s) may be required.

BIO-6: Waters of the U.S./State

The following measures shall be implemented prior to initiation of Project construction:

- Obtain verification of Waters of the U.S. from the USACE and/or Waters of the State from the Central Valley RWQCB.
- A permit authorization under Section 404 of the federal CWA (Section 404 Permit) must be obtained from USACE prior to discharging any dredged or fill materials into any Waters of the U.S. Final avoidance and mitigation measures will be developed as part of the Section 404 Permit process to ensure no-net-loss of wetland function and values.
- A permit authorization from the Central Valley RWQCB pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Act must be obtained prior to the discharge of material in an area that could affect Waters of the U.S./State. Mitigation requirements for discharge to Waters of the U.S./State will be developed in consultation with the Central Valley RWQCB.
- If necessary, a SAA from CDFW pursuant to Section 1602 of the California Fish and Game Code must be obtained for impacts to features (e.g., the bed, channel, or bank of any river, stream, or lake) that may be subject to Section 1600 of the Fish and Game Code. The construction contractor shall adhere to all conditions outlined in the Section 1602 SAA.

4.5 Cultural Resources

Cultural resources include prehistoric archaeological sites, historic archaeological sites, and historic structures, and generally consist of artifacts, food waste, structures, and facilities made by people in the past. Prehistoric archaeological sites are places that contain the material remains of activities carried out by the native population of the area (i.e., Native Americans) prior to the arrival of Europeans in Southern California. Places that contain the material remains of activities carried out by people during the period when written records were produced after the arrival of Europeans are considered historic archaeological sites. Historic structures include houses, garages, barns, commercial structures, industrial facilities, community buildings, and other structures and facilities that are more than 50 years old. Historic structures may also have associated archaeological deposits, such as abandoned wells, cellars, privies, refuse deposits, and foundations of former outbuildings.

ECORP Consulting, Inc. prepared a *CONFIDENTIAL Cultural Resources Inventory and Evaluation Report* (ECORP 2022e) for the proposed Project to determine if cultural resources were present in or adjacent to the Project Area and assess the sensitivity of the Project Area for undiscovered or buried cultural resources. The information provided below is an abridged version of the Cultural Resources Inventory and Evaluation Report and is included here to provide a brief context of the potential cultural resources in the Project Area. Due to the sensitive nature of cultural resources and their records and documentation, which are restricted from public distribution by state and federal law, the IS/MND appendices do not include the cultural resources report; however, all pertinent information necessary for impact determinations is included in this section. A redacted version of the cultural resources report that does not include site records or locations may be obtained by contacting the County of Sutter.

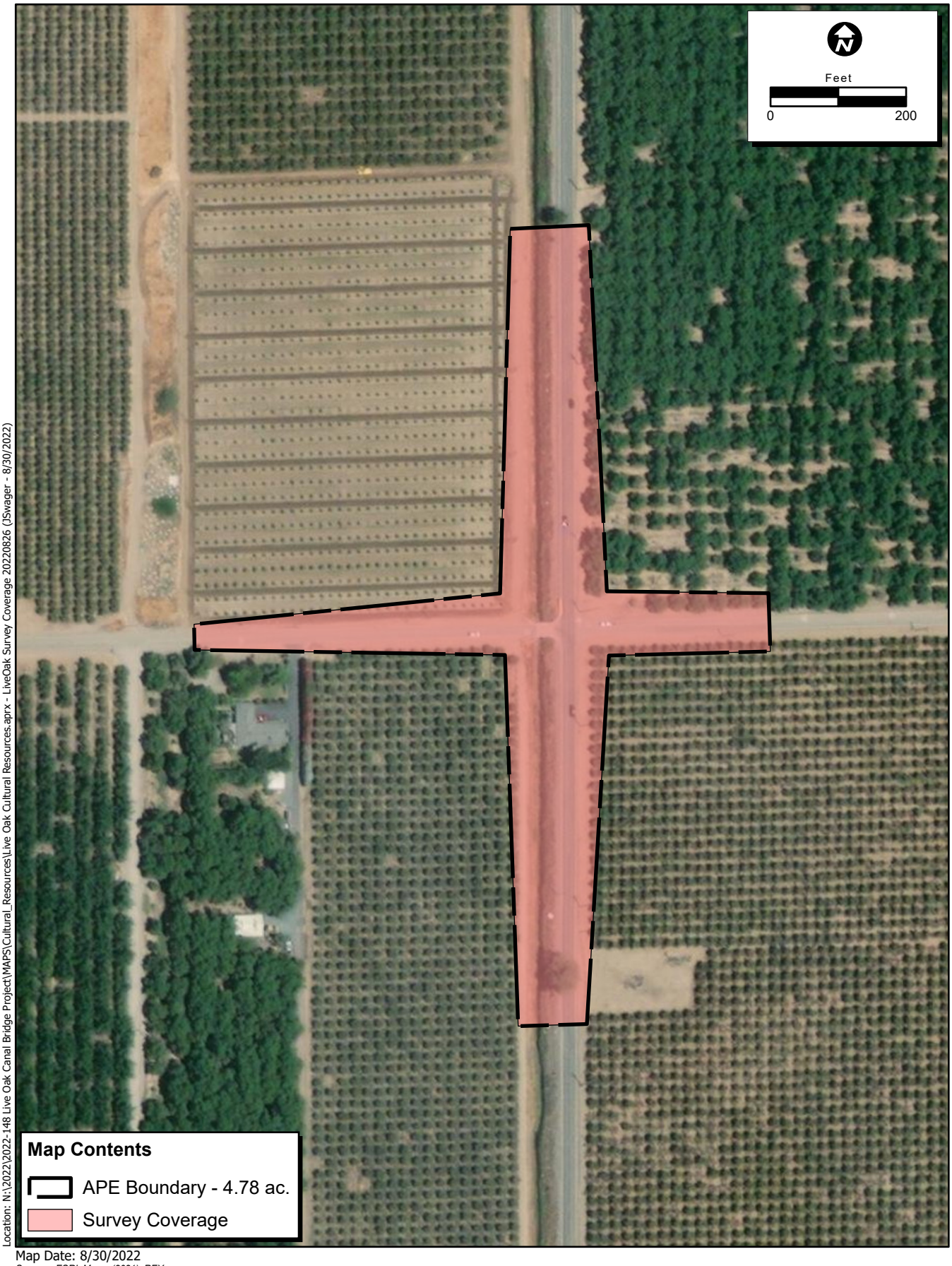
ECORP subjected the 4.78-acre Area of Potential Effect (APE) to an intensive pedestrian survey on August 11, 2022, under the guidance of the Secretary of the Interior's Standards for the Identification of Historic Properties (National Park Service 1983) using 10-meter transects (Figure 4.5-1). ECORP expended one-third person-day in the field. The Right-of-Way (ROW) shoulder of Sanders and Larkin roads; and the eastern and western sides of the Live Oak Canal were walked and inspected. At the time, the ground surface was examined for indications of surface or subsurface cultural resources. The general morphological characteristics of the ground surface were inspected for indications of subsurface deposits that may be manifested on the surface, such as circular depressions or ditches. Whenever possible, ECORP examined the locations of subsurface exposures caused by such factors as rodent activity, water or soil erosion, or vegetation disturbances for artifacts or for indications of buried deposits. No subsurface investigations or artifact collections were undertaken during the pedestrian survey.

Standard professional practice requires that all cultural resources encountered during the survey be recorded using Department of Parks and Recreation (DPR) 523-series forms approved by the California Office of Historic Preservation. The resources are usually photographed, mapped using a handheld Global Positioning System receiver, and sketched as necessary to document their presence using appropriate DPR forms. ECORP photo documented the two roads, canal, and canal bridge during the field survey.

4.5.1 Environmental Setting

4.5.1.1 Project Area History

Sutter County is one of the original 27 counties and was formed and named after John Sutter, a Swiss immigrant, in 1850 (Gudde 1969). Sutter County voters selected Yuba City as the county seat in 1856. John Sutter is credited for naming the Yuba River because of the Native American village located near the confluence of the Yuba and Feather rivers (Gudde 1969). A newspapers article from the Marysville Herald in 1850 quote John Sutter stating the following: "The tribe I found at, which still remains at the old rancheria at Yuba City, informed me that the name of their tribe was Yubu (pronounced Yuboo). As this tribe lived opposite at the mount of the river from which your county takes its name, I gave that river the name Yuba" (Gudde 1969). The town of Yuba City was laid out in 1849 and was named after the river. The first county courthouse was erected in Yuba City in 1858. Following a fire in 1871, a new courthouse was built at the northeast corner of C and 2nd streets, and subsequently reconstructed after another fire in 1899 (Delay 1924).



Location: N:\2022\2022-148 Live Oak Canal Bridge Project\MAPS\Cultural_Resources\Live Oak Cultural Resources.aprx - LiveOak Survey Coverage 20220826 (JSwager - 8/30/2022)

Map Date: 8/30/2022

Sources: ESRI, Maxar (2021), REY

Figure 4.5-1. Field Survey Coverage

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

2022-148 Live Oak Canal Bridge Replacement

In 1849, John Sutter deeded land that was part of the New Helvetia Rancho located west of the Feather River to Samuel Brannan, Pierson B. Redding, Henry Cheever, and himself. The New Helvetia Rancho encompassed 48,000 acres of land granted to John Sutter in 1841. The rancho extended from downtown Sacramento and north to Marysville along the Sacramento and Feather rivers. Sutter deeded 4 square miles of land in 1849 and it would become Yuba City. Pierson Redding was in charge of advertising and selling lots, which went up for sale of beginning in late 1849. By 1850, the community emerged as a collection of tents concentrated on the banks of the Feather River. The fledgling, would-be commercial center was almost immediately overshadowed by neighboring Nye's Ranch, established as Marysville in 1850, owing largely to the latter town's relatively easy access to the gold fields of the mountain interior (Delay 1924).

The town of Live Oak was named after the dense forest of live oak trees that inhabited the area prior to development. The town of Live Oak is located approximately 5 miles north of the Project Area. The community was first settled by A.M. McGrew in 1869 when he purchased the land from squatters and constructed a house located at 9778 Larkin Road, which still stands today. Following McGrew's arrival, the city further expanded during the 1870s when the California-Oregon Division of the Central Pacific Railroad was completed. The rail line running through Live Oak was built to connect Marysville to Portland, Oregon. The connection line was completed in 1887 (Briick 1970). Proximity to the rail, with two daily passenger and freight train services each way, made the city more readily accessible for settlers and visitors. The rail also led to Live Oak's success in agriculture. The community's products, such as prunes, peaches, grapes, rice, almonds and particularly alfalfa, relied upon the rail for transporting.

The first store was opened and operated in 1874 by H. L. Gregory; it was located on the northern side of Pennington Road between the Central Pacific Railroad and Northern Electric Railway. Later that same year, a post office was established in the store with Gregory serving as the postmaster. The business was later moved to Broadway at Fir Street (Briick 1970). A warehouse, blacksmith shop, saloon, and several houses were also soon established that fall. A railroad depot was constructed in 1876 (Withington 1978) and is the only known depot that has survived from the California and Oregon Division, which incorporated in 1868. The rail line later became part of Southern Pacific Railroad and was important in developing the upper Sacramento Valley for agriculture and settlement (Vodden 1999). Although currently vacant and deteriorating, this building currently still stands in its original location.

The community had a population of 125 by 1879. Live Oak's downtown commercial area continued to grow along First Street, today called Broadway. A Wells Fargo and Company Express office was established March 15, 1879. A hotel, a warehouse, a Chinese washhouse, and one hall were also constructed (Briick 1970).

Farmers began growing cling peaches in 1890 because these firmer fruits were better suited for mechanized canning. Cling peaches became the most popular type of peach grown in Live Oak and Yuba City. One of the largest farms, the Schmidl Farms, started growing peaches in 1910 and continued for at least three generations (Wilfong 1992).

SR 99 was constructed through Live Oak in 1915, following the Central Pacific Railroad lines (Briick 1970). An unsuccessful attempt was made 11 years later to incorporate Live Oak as a city. Incorporation was

finally accomplished on January 14, 1947, when the community's population was 1,200 (Crowhurst et al. 1998). The Live Oak historic commercial district is still located on Broadway between Elm Street and Pennington Road.

4.5.1.2 Live Oak Protection District and Reclamation District 777

Efforts to reclaim flood-prone lands in California are as old the state itself. On September 28, 1850, 19 days after California achieved statehood, Congress passed the Swamp Lands Act, which transferred millions of unclaimed federal "swamp and overflow lands" to California and other states. Through sales of these unclaimed lands, the Act aimed to generate revenues for state reclamation projects. California received more than 2 million acres. Much of it consisted of lowlands in the Central Valley and Sacramento-San Joaquin Delta. Confusion over levee-building authority prompted state lawmakers in 1861 to create the State Board of Reclamation Commissioners, which oversaw levee building activities in newly created reclamation districts (Thompson 1965). The controversial Board dissolved after only five years, but the reclamation districts they oversaw endured for decades. Succeeding legislation reaffirmed the use of special districts to achieve drainage and reclamation of flood-prone lands in California. With authority from county boards of supervisors, neighboring landowners up and down the state established new districts, levied taxes against themselves, and cooperatively arranged for the construction of levees, canals, and pumps to protect their fields from floodwaters (Henley 1957).

State lawmakers in March 1895 enacted a law creating "protection districts" for "the improvement and rectification of the channels of unnavigable streams and watercourses," otherwise known as sloughs. Four months later, a group of neighboring landowners in northeastern Sutter County successfully petitioned the Sutter County Board of Supervisors to establish the "Live Oak Protection District" to drain Live Oak Slough (*Sutter County Farmer* 1895a). For years, Live Oak Slough had bedeviled grain farmers north of Yuba City by flooding surrounding fields and ruining crops. That September, William F. Peck, Sutter County Surveyor, delivered a report outlining plans for draining the slough 13 miles south to the Sutter Basin tule marsh at what is now the Sutter Bypass. Peck located the south end of the slough at a field belonging to a farmer named William Sanders. There he proposed to "cut a new canal as a continuation" (*Sutter County Farmer* 1895b,1895c). Peck estimated the project would cost $30,000 but protect approximately 18,000 acres of farmland. Work began in October and proceeded through the fall of 1895. With Peck supervising construction efforts, crews built the Live Oak Canal backwards, beginning from the Sutter Basin and progressing north and east along section lines. They reached the south end of Live Oak Slough at William Sanders' field by the second week of December, completing the canal; successive work deepening and widening the preexisting Live Oak Slough channel carried on through early 1896 (*Sutter County Farmer* 1895d).

The Live Oak Canal received its first significant test in February 1897 when winter storms brought heavy rains to the Sacramento Valley. Farmers in the Live Oak Protection District fared better than many of their Sutter County neighbors. "The new ditch," reported the *Sutter County Farmer*, "has proven its worth by carrying off the bulk of the water thus saving thousands of acres of grain from damage." Farmers in the district estimated the value of grain spared from floodwaters more than offset district tax obligations.

"The canal," the *Farmer* concluded, "has proven a success and has amply repaid for the money expended on the same" (*Sutter County Farmer* 1897).

The Live Oak Protection District was not the only protection district established in 1895 in northeastern Sutter County. To the west, property owners in the Snake River Protection District improved their own troublesome slough (*Sutter County Farmer* 1895a). After 1900, reclamation districts in the region supplanted protection districts. RD 777, established in 1907, overlapped the Live Oak Protection District and incorporated the Live Oak Canal into its system of levees, canals, and pumps along the western side of the Feather River. RD 777 eventually abandoned the Live Oak Canal south of Pease Road once the State of California built the Western Interceptor Canal, which carried Live Oak Canal's drainage west to the Wadsworth Canal and on to the Sutter Bypass (Reclamation District 777 2022). Reclamation districts 2056 and 2054, located immediately west of RD 777, similarly handled flood control efforts along the Snake River and Morrison Slough, west of Live Oak Slough (Delay 1924).

4.5.1.3 Historic Context of Public Roads Development

The following is a brief historical context for road development during the period when the roads within the Project Area (LO-2, Sanders Road and LO-3, Larkin Road), were constructed and used. The context is included to better understand the social and economic factors associated with road development and how the resources fit within that context.

Public roads in the western U.S. have their origins in the enabling acts of 1802 and 1803, which set aside proceeds from the sale of public lands in Ohio for the "laying out, opening and making roads" in western territories. The acts funded the National Road, a wagon road that traversed the Appalachian Mountains and facilitated early western settlement. During the 19th century, as the U.S. made western territorial gains, Congress directed Army engineers to establish hundreds of miles of wagon roads linking western military installations. Federal railroad surveys carried out after 1850 continued the work. For a generation of overland emigrants and freighters, 19th-century wagon roads established by Army engineers and railroad surveyors pointed the way west (Lamar 1998).

Many early public roads, particularly those that traversed mountain passes, followed Native American footpaths. In California, early nonnative incursions such as the de Anza (1774), Portola (1769), and Fremont (1844) expeditions relied on directions provided by California Native American guides. The roads that Spanish, Mexican, and American newcomers established over mountain passes linking missions, presidios, pueblos, ranchos, and forts often superseded preexisting Native American trails (Davis 1961).

The Good Roads Movement

During the second half of the 19th century, as the U.S. became preoccupied with railroad building, older wagon roads became neglected and degraded. "By 1900," observes one planning historian, "the nation with the greatest railway system in the world had the worst roads" (Johnson 1990). Interest in road building revived after 1890 as farmers and ranchers, many who settled on remote western lands distant from railroads, pressured county officials for improvements. They were joined by millions of bicyclists who called for smoother roads in town and in the countryside. Joining forces, farmers, ranchers, and bicyclists in 1893 founded the National Good Roads Association to promote road improvements. The federal

government responded by establishing the Office of Road Inquiry in the Department of Agriculture to study new road building methods (Lamar 1998).

Unimproved dirt roads had limited value for good roads proponents. Dusty during summer months, dirt roads became impassable during the winter and spring as mud caused by snow, rain, and runoff played havoc with horse-drawn vehicles and bicycles. Overcoming mud and dust became a focus of good roads engineering. Early efforts involved wood. Plank roads made from lumber appeared in the 1850s. A method called the Nicholson paving came into use after 1860. It consisted of square wood blocks nailed to planks and coated with tar. Concrete, gravel, and a form of compacted gravel called macadam also became widely used during the late 19th century. Finally, beginning in about 1885, asphalt—a mixture of bitumen, aggregate, and sand—became the standard modern road surface in the U.S. Durable, smooth, and impervious to water, asphalt withstood winter weather, reduced vehicular wear and tear, and facilitated better drainage (Kostof 1991).

Rural County Roads

The task of improving and maintaining rural roads in the U.S. typically fell to county governments. County boards of supervisors, acting on behalf of constituents, furnished taxpayer funds for the grading and paving of rural roads. Many rural county roads connected cities to smaller towns or to sites of production such as farms, ranches, mines, quarries, and mills. These roads, such as Auburn Boulevard, typically took on the name of a principal destination such as a city, town, ranch, or mine.

Thousands of other rural county roads derived from the Public Land Survey System, a checkerboard of square-mile sections laid out by federal surveyors to facilitate the sale of western public lands. Because they marked farm boundaries, section and quarter-section lines became natural roadways (Johnson 1990). To create roads, neighboring landowners forfeited equal strips of land along section lines—typically 33 feet apiece making 66-foot roadways—to county boards of supervisors in exchange for taxpayer-funded improvements (U.S. Department of Transportation 1976). In California, the same principal applied to Mexican land grants not surveyed under the Public Land Survey System. Instead of tracing section lines, "grant line roads" in California traced older grant line boundaries.

Bridges

In order to evaluate the vehicle bridge across the Live Oak Canal, a historical and engineering context of bridge design and construction is included below. Bridges are an essential component of roadway construction and design. As such, historical information on the thousands of bridges in California is extensive, so only information relevant to the bridges under evaluation is included below.

There is one bridge that spans the Live Oak Canal, recorded as LO-1, within the Project Area: Local bridge 18C0106, a continuous concrete-slab bridge. The bridge was constructed in 1945 to carry Sanders Road over the canal. The bridge primarily serves the farmers providing access between agricultural fields within the area. Because the bridge serves a local road that crosses the canal, its construction and history follow the basic bridge construction and design trends for the mid-1940s, when it was constructed.

Many road projects during the 1930s were initiated as part of New Deal funding initiatives. One initiative was the 1934 Hayden Cartwright Act that allowed the use of federal money for highway improvements. Also, the Works Progress Administration (WPA) was established in 1935 as another federally funded effort to build and maintain roadways. Between 1935 and 1943, approximately 570,000 miles of rural roads and 78,000 new bridges were built, and an additional 46,000 existing bridges were improved by the WPA. Like many other WPA projects, architects and designers were used in the construction efforts. Architects for the WPA favored aesthetics in their designs that led to picturesque park bridges, many of them matching the architectural influences of the period including the art deco architectural style (Brinkerhoff 2005).

Eventually, the onset of World War II brought a decline to the improvements of the WPA including highly aesthetic bridge design, particularly because bridge construction materials such as steel were needed for the war effort. The shortage of materials led road improvements, including bridge design, to the use of salvaged materials including unreinforced concrete and even timber structures. Also during this period, the use of mathematical formulas started to become a widely accepted way of developing bridge design concepts. Mathematical formulas made it easier to calculate appropriate bridge construction designs for the needs of the road and setting of the bridge. After World War II ended, these new mathematical formulas were common practice in bridge construction as well as the use of concrete, particularly for smaller rural bridges (Brinkerhoff 2005).

The continuous concrete-slab bridge is a simple design that consists of a thick piece of concrete placed between two abutments. Concrete-slab bridges were a practical design, particularly for small rural roadways, because of its affordability in construction and ability to be cast in place or even precast. Small concrete bridges required very simple construction onsite, which led to lowered construction and installation costs and more efficient roadway development. After World War II, steel was also more readily available to reinforce the concrete bridges making them even stronger and able to span longer distances. Despite concrete crossings having almost no artistic architectural design, their low-profile nature was also appealing for aesthetics because they did not detract from the landscapes in which they were placed. Concrete slab bridges were very commonly built during the 1940s and 1950s and continue to be built for small spans today, particularly in rural agricultural areas (Brinkerhoff 2005).

4.5.2 Regulatory Setting

A review of the regulatory context is provided below; however, the inclusion of any of these laws and regulations in this report does not make a law or regulation apply when it otherwise would not. Similarly, the omission of any other laws and regulations from this section does not mean that they do not apply. Rather, the purpose of this section is to provide context in explaining why the study was carried out in the manner documented herein.

4.5.2.1 National Environmental Policy Act

The national policy for the protection and enhancement of the environment is established by the National Environmental Policy Act (NEPA). Part of the function of the federal government in protecting the environment is to "preserve important historic, cultural, and natural aspects of our national heritage." Cultural resources need not be determined eligible for the National Register of Historic Places (NRHP)

through the National Historic Preservation Act (NHPA) of 1966 (as amended) to receive consideration under NEPA. Regulations of the Council on Environmental Quality (40 CFR 1500-1508) implement NEPA.

The definition of *effects* in the NEPA regulations includes adverse and beneficial effects on historic and cultural resources (40 CFR 1508.8). Therefore, the *Environmental Consequences* section of an Environmental Impact Statement [40 CFR 1502.16(f))] must analyze potential effects to historic or cultural resources that could result from the proposed action and each alternative. In considering whether an alternative may "significantly affect the quality of the human environment," a federal agency must consider, among other things:

- Unique characteristics of the geographic area, such as proximity to historic or cultural resources (40 CFR 1508.27(b)(3)), and
- The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the NRHP (40 CFR 1508.27(b)(8)).

Therefore, because historic properties are a subset of *cultural resources*, they are one aspect of the *human environment* defined by NEPA regulations.

4.5.2.2 National Historic Preservation Act

The federal law that covers cultural resources that could be affected by federal undertakings is the NHPA of 1966, as amended. Section 106 of the NHPA requires that federal agencies take into account the effects of a federal undertaking on properties listed in or eligible for the NRHP. The agencies must afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on the undertaking. A federal undertaking is defined in 36 CFR 800.16(y):

> "A federal undertaking means a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license, or approval."

The regulations that stipulate the procedures for complying with Section 106 are in 36 CFR 800. The Section 106 regulations require:

- definition of the APE;
- identification of cultural resources within the APE;
- evaluation of the identified resources in the APE using NRHP eligibility criteria;
- determination of whether the effects of the undertaking or project on eligible resources will be adverse; and
- agreement on and implementation of efforts to resolve adverse effects, if necessary.

The federal agency must seek comment from the State Historic Preservation Officer (SHPO) and, in some cases, the ACHP, for its determinations of eligibility, effects, and proposed mitigation measures. Section 106 procedures for a specific project can be modified by negotiation of a Memorandum of Agreement or

Programmatic Agreement between the federal agency, the SHPO, and, in some cases, the project proponent.

Effects to a cultural resource are potentially adverse if the lead federal agency, with the SHPO's concurrence, determines the resource eligible for the NRHP, making it a Historic Property, and if application of the Criteria of Adverse Effects (36 CFR 800.5[a][2] et seq.) results in the conclusion that the effects will be adverse. The NRHP eligibility criteria, contained in 36 CFR 60.4, are as follows:

> "The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess aspects of integrity of location, design, setting, materials, workmanship, feeling, association, and
>
> A. that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B. that are associated with the lives of persons significant in our past; or
>
> C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> D. that have yielded, or may be likely to yield, information important in prehistory."

In addition, the resource must be at least 50 years old, barring exceptional circumstances (36 CFR 60.4). Resources that are eligible for, or listed on, the NRHP are *historic properties*.

Regulations implementing Section 106 of the NHPA (36 CFR 800.5) require that the federal agency, in consultation with the SHPO, apply the Criteria of Adverse Effect to historic properties within the APE. According to 36 CFR 800.5(a)(1):

> "An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association."

4.5.2.3 California Environmental Quality Act

The state law that applies to a project's impacts on cultural resources is CEQA. A project is an activity that may cause a direct or indirect physical change in the environment and that is undertaken or funded by a state or local agency, or requires a permit, license, or lease from a state or local agency. It is a requirement of CEQA that impacts to Historical Resources be identified and, if the impacts will be significant, then mitigation measures be applied to reduce the impacts.

A Historical Resource is a resource that 1) is listed in or has been determined eligible for listing in the California Register of Historic Resources (CRHR) by the State Historical Resources Commission, or has been determined historically significant by the CEQA lead agency because it meets the eligibility criteria

for the CRHR; 2) is included in a local register of historical resources, as defined in Public Resources Code (PRC) 5020.1(k); or 3) has been identified as significant in a historical resources survey, as defined in PRC 5024.1(g) (California Code of Regulations [CCR] Title 14, Section 15064.5(a)).

The eligibility criteria for the CRHR are as follows (CCR Title 14, Section 4852(b)):

(1) It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the U.S.;

(2) It is associated with the lives of persons important to local, California, or national history;

(3) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or

(4) It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition, the resource must retain integrity, which is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association (CCR Title 14, Section 4852(c)). Resources that have been determined eligible for the NRHP are automatically eligible for the CRHR.

Impacts to a Historical Resource, as defined by CEQA (listed in an official historic inventory or survey or eligible for the CRHR), are significant if the resource is demolished or destroyed or if the characteristics that made the resource eligible are materially impaired (CCR Title 14, Section 15064.5(b)). Demolition or alteration of eligible buildings, structures, and features such that they would no longer be eligible would result in a significant impact. Whole or partial destruction of eligible archaeological sites would result in a significant impact. In addition to impacts from construction resulting in destruction or physical alteration of an eligible resource, impacts to the integrity of setting (sometimes termed *visual impacts*) of physical features in the Project Area could also result in significant impacts.

Tribal Cultural Resources (TCRs) are defined in Section 21074 of the California PRC as sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are either included in or determined to be eligible for inclusion in the CRHR, or are included in a local register of historical resources as defined in subdivision (k) of Section 5020.1, or are 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 Section 5024.1. Section 1(b)(4) of AB 52 established that only California Native American tribes, as defined in Section 21073 of the California PRC, are experts in the identification of TCRs and impacts thereto. Because ECORP does not meet the definition of a California Native American tribe, it only addresses information in this report for which it is qualified to identify and evaluate, and that which is needed to inform the cultural resources section of CEQA documents. This report, therefore, does not identify or evaluate TCRs. Should California Native American tribes ascribe additional importance to or interpretation of archaeological resources described herein, or provide information about non-archeological TCRs, that information is documented separately in the AB 52 tribal consultation record between the tribe(s) and lead agency and summarized in the TCRs section of the CEQA document, if applicable.

4.5.3 Cultural Resources (V) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☒	☐	☐

Less than Significant with Mitigation Incorporated.

The records search conducted by ECORP in the *CONFIDENTIAL Cultural Resources Inventory and Evaluation* (ECORP 2022e) found that the Project Area and surrounding 0.5-mile search radius have not been previously surveyed for cultural resources; thus, no resources had been recorded within the Project Area prior to ECORP's search. ECORP (2022e) identified four new historic-period cultural resources within the Project Area: LO-1, Live Oak Canal Bridge (Bridge No. 18C0106); LO-2, Sanders Road; LO-3, Larkin Road; and LO-4, the Live Oak Canal. ECORP evaluated the four built environment resources individually as not eligible for the NRHP and CRHR. Therefore, none are considered Historical Resources as defined by CEQA or Historic Properties under Section 106 of the NHPA.

Due to the presence of alluvium along the Feather River, the higher potential for preservation of archaeological deposits in alluvial contexts, and the likelihood of pre-contact archaeological sites along perennial waterways, the setting indicates potential for subsurface cultural resources within the Project Area. Given the lack of prior cultural studies in or within 0.5 mile of the Project Area, the dearth of previously recorded pre-contact cultural resources is not necessarily an indication that such sites are not present. Historic-period disturbance may have destroyed or displaced surface manifestations of any pre-contact archaeological deposits; however, given this disturbance, the potential is low. There is also low potential for subsurface historic-period archaeological deposits given the fact that the Project Area was virtually unused and undeveloped since the 1860s, with the exception of the roads, canal, and bridge. These resources are unlikely to yield subsurface deposits.

The potential always remains for ground-disturbing activities to expose previously unrecorded cultural resources. Both CEQA and Section 106 of the NHPA require the lead agency to address any unanticipated cultural resource discoveries during Project construction. Therefore, Mitigation Measure CUL-1 would be implemented to reduce potential adverse impacts to less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐

Less than Significant with Mitigation Incorporated.

See answer to a), above. Impacts would be less than significant with the incorporation of Mitigation Measure CUL-1.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

Less than Significant with Mitigation Incorporated.

See answer to a), above. Impacts would be less than significant with the incorporation of Mitigation Measure CUL-1.

4.5.4 Mitigation Measures

CUL-1: Unanticipated Discoveries

If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, the archaeologist shall immediately notify the lead agencies. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines or a historic property under Section 106 NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not a Historical Resource under CEQA or a Historic Property under Section 106; or 2) that the treatment measures have been completed to their satisfaction.
- If the find includes human remains, or remains that are potentially human, they shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Sutter County Coroner (per Section 7050.5 of the Health and Safety Code). The provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California PRC, and AB

2641 will be implemented. If the coroner determines the remains are Native American and not the result of a crime scene, the coroner will notify the Native American Heritage Commission (NAHC), which then will designate a Native American Most Likely Descendant (MLD) for the Project (Section 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (Section 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (Section 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

The lead agency is responsible for ensuring compliance with this mitigation measure. Section 15097 of Title 14, Chapter 3, Article 7 of CEQA, Mitigation Monitoring or Reporting, "The public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects. A public agency may delegate reporting or monitoring responsibilities to another public agency or to a private entity which accepts the delegation; however, until mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program."

4.6 Energy

This section analyzes energy consumption due to the potential direct and indirect environmental impacts associated with the Project. Such impacts for this project include the depletion of nonrenewable resources (e.g., oil, natural gas, coal) and emissions of pollutants during the construction. Since the proposed Project is a canal bridge replacement, there will be no operational energy uses. Discussion of the impact will focus on the equipment fuel necessary for Project construction, which is the single source of energy relevant to the proposed Project.

4.6.1 Environmental Setting

California relies on a regional power system comprised of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Natural gas provides California with a majority of its electricity followed by renewables, large hydroelectric and nuclear (California Energy Commission [CEC] 2021a). PG&E provides power to Sutter County, using a diverse portfolio of energy sources, including natural gas, hydropower, geo-thermal, nuclear, wind, and solar energies. PG&E service area spans over 70,000 square miles in the Northern California areas and provides about 5.2 million people with electricity and natural gas.

4.6.1.1 Energy Consumption

Electricity use is measured in kilowatt-hours (kWh). Vehicle fuel use is typically measured in gallons (e.g. of gasoline or diesel fuel), although energy use for electric vehicles is measured in kWh.

The electricity consumption associated with all land uses in the County of Sutter from 2016 to 2020 is shown in Table 4.6-1. As indicated, the demand for electricity has gone up and down since 2016, slightly increasing over the years.

Table 4.6-1. Electricity Consumption in Sutter County 2016-2020

Year	Electricity Consumption (kilowatt hours)
2020	672,551,697
2019	636,606,549
2018	636,643,617
2017	646,434,323
2016	631,002,716

Source: CEC 2021b

The natural gas consumption associated with all uses in Sutter County from 2016 to 2020 is shown in Table 4.6-2. In general, the demand has increased since 2016.

Table 4.6-2. Natural Gas Consumption in Sutter County 2016-2020

Year	Natural Gas Consumption (therms)
2020	21,997,217
2019	20,945,379
2018	20,296,466
2017	20,951,170
2016	18,006,822

Source: CEC 2021b

Total automotive fuel consumption in Sutter County from 2017 to 2021 is shown in Table 4.6-3. As shown, automotive fuel consumption decreased since 2017.

Table 4.6-3. Automotive Fuel Consumption in Sutter County 2017-2021	
Year	**Fuel Consumption (gallons)**
2021	74,419,049
2020	67,274,613
2019	76,096,151
2018	75,660,023
2017	76,198,022

Source: CARB 2021

4.6.2 Energy (VI) Environmental Checklist and Discussion

Would the Project:	Potentially Significant 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?	☐	☐	☒	☐

Less than Significant Impact.

The impact analysis for this Proposed Project focuses on the construction phase of the Project. During Project construction, a road closure and detour routes are proposed, which will add approximately 1.2 additional miles to the usual route for commuters. In this analysis, estimates are made to account for the total Project fuel consumption, or the fuel necessary for construction and the additional fuel consumption for the detour, which is shown in Table 4.6-4. Since there is no operational phase of this Project that would require consumption of energy, there is no operational impact. For the purpose of this analysis, the amount of fuel necessary for Project implementation is calculated and compared to that consumed in Sutter County. The amount of total construction-related fuel use was estimated using ratios provided in the Climate Registry's General Reporting Protocol for the Voluntary Reporting Program, Version 2.1.

Addressing energy impacts requires an agency to make a determination as to what constitutes a significant impact. There are no established thresholds of significance, statewide or locally, for what constitutes a wasteful, inefficient, and unnecessary consumption of energy for a proposed land use project. The proposed Project's fuel consumption is then compared to the rest of the County's consumption.

Table 4.6-4. Proposed Project Energy and Fuel Consumption	
Energy Type	**Annual Energy Consumed**
Vehicular/Equipment Fuel Consumption	
Project Construction	29,261 gallons
Detour	16,594 gallons
Total	**45,855 gallons**
Percentage Increase Countywide	**0.062%**

Notes: The Project increase construction-related and additional detour fuel consumption is compared with the countywide construction-related fuel consumption in 2021, the most recent full year of data. Estimates for Detour Fuel Consumption were calculated as such: (Additional Detour Daily VMT)/((Sutter County 2021 VMT)/(Sutter County 2021 Gallons Consumed))x(152 days*) = Detour Fuel Consumption
*152 days is equal to the number of days in 5 months, when the detour will be in effect, per the Project Description.
VMT=Vehicle Miles Traveled
Source: CARB EMFAC 2021a; Climate Registry 2016,.

As shown in Table 4.6-4, the Project's gasoline fuel consumption during the construction period, along with detour fuel consumption, is estimated in total to be 45,855 gallons of fuel, which would increase the gasoline fuel use in the county by 0.062 percent during the Project construction period. As such, Project fuel consumption would have a nominal effect on local and regional energy supplies, especially over the long-term. Additionally, construction equipment fleet turnover and increasingly stringent state and federal regulations on engine efficiency combined with state regulations limiting engine idling times and require recycling of construction debris, would further reduce the amount of transportation fuel demand during Project construction. For these reasons, it is expected that construction fuel consumption associated with the Project would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature.

As previously discussed, operations of the Project would not generate any fuel consumption as it is just a replacement of a canal bridge. As such, there would be no fuel consumption associated with operation and would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region. For these reasons, this impact would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

No Impact.

The proposed Project is for replacement of a canal bridge within Sutter County. It does not conflict with or obstruct a plan for renewable energy or energy efficiency. No impact would occur.

4.6.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.7 Geology and Soils

This section addresses the potential impact of the proposed Project on geological and soil resources within the Project Area and the potential impact of the geomorphic setting on the proposed Project. The information and analysis presented here is based, in part, on the *Draft Foundation Report* prepared by Crawford (2022b). The Draft Foundation Report is included with this Initial Study as Appendix F.

Crawford retained Geo-Ex Subsurface Exploration (GeoEx) to drill and sample two exploratory borings for the proposed box culvert slab foundation. GeoEx used a CME 75 track drill rig on August 1, 2022. The maximum depth of exploration was 52.5 ft below ground surface using 4-inch solid stem augers and 4-inch mud-rotary (wireline) drill equipment.

4.7.1 Environmental Setting

4.7.1.1 Geomorphic Setting

The Project site is located in the Great Valley Geomorphic Province of California that includes the Sacramento and San Joaquin Valleys and is bounded by the Sierra Nevada on the east and the Coast Ranges on the west. The site is located in the Sacramento Valley which is a structural trough comprising the northern portion of the Great Valley. The relatively flat surface of the Sacramento Valley is an elongated, structural basin that is underlain by marine and non-marine sediments. The sediment thickness is up to five (Crawford 2022b).

Published geologic mapping shows surface materials at the Project site as alluvial deposits of the Quaternary-aged Modesto Formation, which generally consist of gavels, sands, silts, and clays. Within this area, the Modesto Formation ranges in thickness from about 50 to 150 ft. The site is not located within an Alquist-Priolo Seismic Hazard Zone for fault rupture hazard. No other evidence of significant hazards (such as settlement, very soft soils, severe erosion, subsidence) was observed in the Project vicinity (Crawford 2022b).

4.7.1.2 Soils

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey database, the Project site consists of Conejo-Tisdale complex, 0 percent slopes (NRCS 2022). The soil type has the following properties:

- Drainage Class: Moderately Well-Drained
- Flooding Frequency Class: None
- Hydrologic Soil Group: C

Hydrologic Soil Groups

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation.

- Group A: Soils having a high infiltration rate (low runoff potential) when thoroughly wet.
- Group B: Soils having a moderate infiltration rate when thoroughly wet.
- Group C: Soils having a slow infiltration rate when thoroughly wet.
- Group D: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet.

4.7.2 Regulatory Setting

Laws and regulations relevant to the proposed project are presented below.

4.7.2.1 Federal

Natural Resources Conservation Service

The U. S. Department of Agriculture Natural Resources Conservation Service (NRCS) produces soil surveys that assist planners in determining which land uses are suitable for specific soil types and locations.

4.7.2.2 State

California Geologic Survey

The California Geological Survey (CGS) provides regulatory information pertaining to soils, geology, mineral resources, and geologic hazards. CGS maintains and provides information about California's nonfuel mineral resources.

August-Priolo Earthquake Fault Zoning Act of 1972

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. This state law was a direct result of the 1971 San Fernando Earthquake, which was associated with extensive surface fault ruptures that damaged numerous homes, commercial buildings, and other structures.

California Seismic Hazards Mapping Act of 1990

The Seismic Hazards Mapping Act of 1990 directs CGS to identify and map areas prone to earthquake hazards of liquefaction, earthquake-induced landslides, and amplified ground shaking. The purpose of the act is to reduce threats to public safety and to minimize loss of life and property by identifying and mitigating these seismic hazards. The Seismic Hazards Mapping Act was passed by the California Legislature after the 1989 Loma Prieta earthquake.

California Building Standards Code

The State of California provides minimum standards for building design through the California Building Standards Code (CBC, California Code of Regulations [CCR] Title 24). Information on current code requirements can be found on the California Building Standard Commission's website. The CBC applies to all occupancies throughout the state unless local amendments have been adopted, and includes regulations for seismic safety, excavation of foundations and retaining walls, and grading activities (including drainage and erosion control and construction on unstable soils).

4.7.3 Geology and Soils (VII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☒	☐
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐

Less than Significant Impact.

i) Surface Fault Rupture

The Project site does not lie within an Alquist–Priolo Earthquake Fault Zone and no known active faults are mapped by the CGS or Caltrans within or through the Project Area. The CGS considers a fault to be active if it has shown evidence of ground displacement during the Holocene period, defined as the last 11,000 years. According to the CGS, the closest active fault is the Cleveland Hill Fault, approximately 23 miles away (Crawford 2022b). Impacts from surface fault rupture would be less than significant.

ii) Seismic Shaking

The proposed Project is required to comply with the California Building Code, which includes requirements for site improvements and building design to ensure project features would withstand the

likely level of seismic ground shaking anticipated for the site. This would reduce any impacts related to ground shaking from distant seismic events to a less-than-significant level.

iii) Liquefaction and Landslides

Soil liquefaction can occur when saturated, relatively loose sand and specific soft, fine-grained saturated soils are subject to ground shaking strong enough to create soil particle separation that results from increased pore pressure. This separation and subsequent pore pressure dissipation can lead to decreased soil shear strength and settlement. Liquefaction is known to occur in soils ranging from low plasticity silts to gravels. However, soils most susceptible to liquefaction are clean sands to silty sands and non-plastic silts. Liquefaction susceptibility of a soil deposit is a function of the soil grain size, relative density, percent fines, plasticity of the fines, degree of saturation, age of deposit, and earthquake ground motion. To evaluate the potential for soil liquefaction to occur at the site, Crawford used the simplified procedure consistent with liquefaction evaluation outlined in the Caltrans Geotechnical Manual. Crawford's boring data and laboratory test results revealed a groundwater depth of 30 feet (approximate elev. 36.0 ft), a site-to-fault distance of 64.7 miles, Maximum Moment Magnitude (Mmax) of 6.82, and a Peak Ground Acceleration of 0.26g. Based on these results, no potentially liquefiable soil layers are identified at this Project site (Crawford 2022b). Therefore, liquefaction is not a geotechnical consideration for foundation design.

iv) Geologic and Soil Instability

During a seismic event, ground shaking can cause densification of granular soil above the water table that can result in settlement of the ground surface. Seismic settlement may occur within the loose to medium dense soil deposits above the groundwater table. The magnitude of such settlement is estimated to be minor and is not expected to adversely impact the new box culvert slab foundation and is not a geotechnical consideration for foundation design (Crawford 2022b).

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐

Less than Significant Impact.

Construction activities would include movement of the underlying soil. This soil disturbance could result in soil erosion. Best Management Practices (BMPs) would be included as part of the SWPPP that will be prepared for the proposed Project. These BMPs would be implemented to reduce and prevent erosion and loss of topsoil during construction-related activities. Implementation of the SWPPP would reduce potential impacts to soil erosion to less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐

Less than Significant Impact.

See answer to 4.7.3 a), above. Impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐

Less than Significant Impact.

Site grading and earthwork would be performed in accordance with Section 17 and Section 19 of 2018 Caltrans Standard Specifications. Native existing onsite soils do not meet Caltrans structure backfill requirements and structure backfill would meet the requirements of Caltrans Standard Specifications Section 19 (Crawford 2022b). Compliance with Caltrans Standards and Specifications would result in a less than significant impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

No Impact.

No septic tanks or alternative wastewater disposal systems are proposed. There would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

Less than Significant Impact.

ECORP requested a University of California Museum of Paleontology (UCMP) review of the Project site in August 2022. UCMP found no records of previous finds in the Project Area, and the nearest localities were identified more than 10 miles to the west (UCMP 2022). Impacts to unique paleontological resources or unique geologic features would be less than significant.

4.7.4 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.8 Greenhouse Gas Emissions

4.8.1 Environmental Setting

Greenhouse Gas (GHG) emissions are released as byproducts of fossil fuel combustion, waste disposal, energy use, land use changes, and other human activities. This release of gases, such as Carbon Dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and chlorofluorocarbons, creates a blanket around the earth that allows light to pass through but traps heat at the surface, preventing its escape into space. While this is a naturally occurring process known as the greenhouse effect, human activities have accelerated the generation of GHGs beyond natural levels. The overabundance of GHGs in the atmosphere has led to an unexpected warming of the earth and has the potential to severely impact the earth's climate system.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps more than 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO2. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e). Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

The local air quality agency regulating the NSVAB is the FRAQMD, the regional air pollution control officer for the basin. The FRAQMD has yet to establish a significance threshold for construction and operational GHG emissions. However, the Sutter County Climate Action Plan (CAP) developed a CEQA Threshold and Screening Tables for land use projects. The purpose of the CAP CEQA Threshold and Screening Tables are to provide guidance on how to determine the significance of a project's GHG contribution. They are based on the CAP, the GHG inventories within the CAP, and the GHG reduction measures that reduce emissions consistent with the reduction goals of the AB32 Scoping Plan. The CAP CEQA Threshold and Screening Tables are used by Sutter County staff for review of development projects in order to ensure that the

specific reduction strategies in the CAP are implemented as part of the CEQA process from development projects (Sutter County 2010a).

The Screening Tables, used for larger land use development projects, use a point system geared towards encouraging efficiency in building developments. Projects that achieve 100 points or more do not need to quantify GHG emissions and are assumed to have a less than significant impact. Small projects with minor levels of GHG emissions, or ones that do not proposed buildings such as the Proposed Project, typically cannot achieve the 100-point threshold and therefore must quantify GHG emission impacts. As such, Sutter County developed a two-tier pre-screening procedure using a threshold of 3,000 metric tons of CO_2e per year. This threshold is based on evidence that 90 percent of CO_2e emissions are from CEQA projects that exceed 3,000 metric tons CO_2e per year. Both cumulatively and individually, projects that generate less than 3,000 metric tons CO_2e per year have a negligible contribution to overall emissions. Therefore, the County has concluded that projects generating less than 3,000 metric tons of CO_2e would be less than significant and would not have to be further evaluated.

It is noted that the County's bright-line threshold of 3,000 metric tons of CO_2e annually is based, in part, on the GHG-reducing target established for the year 2020 under AB 32, but the thresholds have not be re-evaluated since the 2020 target. Statewide goals for GHG reductions in the years beyond 2020 were codified into State law with the passage of SB 32, which mandates that California achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. Therefore, the Project's contribution to GHG emissions will be compared to a significance threshold of 1,800 metric tons of CO_2e per year, which equates to 40 percent less than 3,000 metric tons.

The Appendix G thresholds for GHG emissions do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA. With respect to GHG emissions, the CEQA Guidelines Section 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or other performance-based standards." (14 CCR 15064.4(b)). A lead agency may use a "model or methodology" to estimate GHG emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change." (14 CCR 15064.4(c)). Section 15064.4(b) provides that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment:

1. The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting.
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

In addition, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines Section 15130(f)). As a note, the CEQA Guidelines were amended in response to Senate Bill 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant.

Per CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions." Put another way, CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.

In Center for Biological Diversity v. Department of Fish and Wildlife (2015) 62 Cal. 4th 2014, 213, 221, 227, following its review of various potential GHG thresholds proposed in an academic study [Crockett, Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World (July 2011), 4 Golden Gate U. Envtl. L. J. 203], the California Supreme Court identified the use of numeric bright-line thresholds as a potential pathway for compliance with CEQA GHG requirements. The study found numeric bright line thresholds designed to determine when small projects were so small as to not cause a cumulatively considerable impact on global climate change was consistent with CEQA. Specifically, Public Resources Code section 21003(f) provides it is a policy of the state that "[a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." The Supreme Court-reviewed study noted, "[s]ubjecting the smallest projects to the full panoply of CEQA requirements, even though the public benefit would be minimal, would not be consistent with implementing the statute in the most efficient, expeditious manner. Nor would it be consistent with applying lead agencies' scarce resources toward mitigating actual significant climate change impacts." (Crockett, Addressing the

Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World (July 2011), 4 Golden Gate U. Envtl. L. J. 203, 221, 227).

The significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines Section 15064.4(b)(2) by considering whether the Project complies with applicable plans, policies, regulations, and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. For the proposed Project, the Sutter County CAP's 3,000 metric tons of CO_2e per year threshold developed, in part, on the GHG-reducing target established for the year 2020 under AB 32, is reduced to 1,800 metric tons of CO_2e consistent with the statewide goals for GHG reductions in the years beyond 2020 that were codified into State law with the passage of SB 32 and used as the significance threshold. As previously described, the 3,000 metric tons of CO_2e per year threshold represents a 90 percent capture rate (i.e., this threshold captures projects that represent approximately 90 percent of GHG emissions from new sources). The 3,000 metric tons of CO_2e per year value is typically used in defining small projects within the County that are considered less than significant because it represents less than one percent of future 2050 statewide GHG emissions target and the lead agency can provide more efficient implementation of CEQA by focusing its scarce resources on the top 90 percent. Using a threshold of 1,800 metric tons of CO2e annually is more conservative than the 3,000 metric tons of CO_2e emissions annually as it would represent a capture rate of more than 90 percent. The fact that small projects below a numeric bright line threshold are not subject to CEQA-based mitigation does not mean such small projects do not help the state achieve its climate change goals because even small projects participate in or comply with non-CEQA-based GHG reduction programs, such implementing projects in accordance with statewide GHG-reducing energy efficiency building standards, called Cal Green or Title 24 energy-efficiency building standards (Crockett 2011) which seek to reduce GHG emissions emitted during construction-related projects such as that proposed by the Project.

4.8.2 Greenhouse Gas Emissions (VIII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐

Less than Significant Impact.

A potent source of GHG emissions associated with the Proposed Project would be combustion of fossil fuels during the bridge replacement construction activities. This construction phase of the Proposed Project is temporary but would result in GHG emissions from the use of heavy construction equipment and construction-related vehicle haul trips.

Construction activities that would generate GHGs include worker commute trips, haul trucks carrying demolition material from the Project site, and off-road construction equipment (e.g., dozers, loaders, excavators). As per the Project Description, during the canal bridge replacement construction period, regular traffic flow will be rerouted on a detour. This detour will add approximately 1.2 additional miles to

usual commute routes. Given the roadway vehicle trip volumes provided in the Project Description, calculations have been made using CARB's EMFAC 2021 to assess the additional GHG emissions that this detour would cause during the construction period. Table 4.8-1 illustrates the specific bridge construction generated GHG emissions that would result from the Project.

Table 4.8-1. Construction-Related Greenhouse Gas Emissions

Emission Source	CO_2e (Metric Tons/Year)
Construction year one	297
Additional detour emissions	216
Total Greenhouse Gas Emissions	513
Sutter County CAP Threshold	*1,800*
Exceed Sutter County CAP Threshold?	***No***

Source: CalEEMod version 2020.4.0. CARB EMFAC 2021b. Refer to Appendix A for Model Data Outputs.

As shown by Table 4.8-1, the Project's GHG emissions would not exceed the applicable significance threshold. A less than significant impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Less than Significant Impact.

The Sutter County CAP includes a GHG inventory, an emission reduction target, and reduction measures to reach the target. As previously described, the CAP includes a two-tiered approach using CEQA Threshold and Screening Tables. Due to the relatively short duration of bridge construction and lack of operational contribution to GHG emissions, the Project's contribution to GHG emissions was compared to the significance threshold of 1,800 metric tons of CO_2e, as previously described. As shown in Table 4.8-1, the Project would produce 513 metric tons of CO_2e during the onetime construction phase. This number does not exceed the threshold and is therefore consistent with the County CAP and statewide GHG reduction efforts. The Project would not conflict with any applicable plans or policies related to the reduction of GHG emissions. A less than significant impact would occur.

4.8.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.9 Hazards and Hazardous Materials

This section addresses the potential impact of hazards and hazardous materials on the proposed Project within the Project Area. The information and analysis presented here is based, in part, on the *Initial Site Assessment* (ISA) prepared by Crawford (2022a). The ISA is included with this Initial Study as Appendix G. A Project site reconnaissance was performed on August 4, 2022, by Maria Alaya and Steve Carter, PG of Crawford. Reconnaissance consisted of a walking and driving traverse along Sanders Road and Larkin Road in the immediate vicinity of the bridge and APE. Reconnaissance included visual observations of bridge construction, the roadway and bridge approaches, and properties bordering the APE. These observations were intended to identify land uses and activities on adjacent properties, and the presence, or likely presence, of hazardous substances or petroleum products at the Project site or on adjacent properties.

4.9.1 Environmental Setting

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined by the California Health and Safety Code, Section 25501 as follows:

> "Hazardous material" means any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

A hazardous material is defined in 22 CCR Section 662601.10 as follows:

> A substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed.

Transporters of hazardous waste in California are subject to several federal and state regulations. They must register with the California Department of Health Services (DHS) and ensure that vehicle and waste container operators have been trained in the proper handling of hazardous waste. Vehicles used for the transportation of hazardous waste must pass an annual inspection by the California Highway Patrol (CHP). Transporters must allow the CHP or DHS to inspect its vehicles and must make certain required inspection records available to both agencies. The transport of hazardous materials that are not wastes is regulated by the U.S. Department of Transportation through national safety standards.

Other risks resulting from hazardous materials include the use of these materials in local industry, businesses, and agricultural production. The owner or operator of any business or entity that handles a hazardous material above threshold quantities is required by state and federal laws to submit a business

plan to the local Certified Unified Program Agency (CUPA). The Sutter County's Environmental Health Division has been designated as the Sutter County's CUPA by the California Environmental Protection Agency in order to focus the management of specific environmental programs at the local government level. The CUPA program is designed to consolidate, coordinate, and uniformly and consistently administer permits and conduct inspection and enforcement activities throughout Sacramento County. This approach strives to reduce overlapping and sometimes conflicting requirements of different governmental agencies independently managing these programs. The County will refer large cases of hazardous materials contamination or violations to the Central Valley Regional Water Quality Control Board (RWQCB) (Region 5) and the California Department of Toxic Substances Control (DTSC). It is not uncommon for other agencies, such as federal and state Occupational Safety and Health Administrations, to become involved when issues of hazardous materials arise.

Under Government Code Section 65962.5, both the DTSC and the State Water Resources Control Board (SWRCB) are required to maintain lists of sites known to have hazardous substances present in the environment. Both agencies maintain up-to-date lists on their websites. The Project site is not listed by the DTSC as a hazardous substances site on the list of hazardous waste sites compiled pursuant to Government Code Section 65962.5 (Cortese List).

4.9.1.1 Project Site

Per Crawford's review of historical records in the ISA, there does not appear to have been any change in land uses within the Project site vicinity during the past 111 years with the exception of the former Northern Electric/Sacramento Northern railway ROW about 500 feet west of the APE. Properties in the Project site vicinity appear to have been utilized for agriculture (abandoned railway ROW in the site vicinity appears to have reverted to agricultural use after abandonment in the 1980s); these conditions appear to have remained unchanged over the historical period examined.

4.9.1.2 Recognized Environmental Conditions

Recognized Environmental Conditions (REC) are defined in the American Society for Testing and Materials Phase I Standards to mean "the presence or likely presence of any hazardous substance or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment." Crawford did not identify any RECs during site reconnaissance in August 2022, but does recommend further sampling and site investigation prior to the initiation of demolition and construction activities. These recommendations are identified below and in Section 4.9.2.

Asbestos Containing Construction Material

Concrete bridge components (piers, footings, abutments, deck) could potentially contain asbestos. Asbestos-Containing Construction Material (ACCM), as defined in the California Code of Regulations, Title 8, Section 1529 of the Construction Safety Orders, can also be present in construction materials such as bridge joint seals, bearing pads, shims, deck drains or other less obvious materials such as pipe conduits for utilities. Under the federal asbestos National Emissions Standards for Hazardous Air Pollutants

regulations (40 CFR Part 61, Subpart M), a Certified Asbestos Consultant (CAC) must make definitive conclusions regarding the presence of ACCM. Prior to demolition or reconstruction, existing structures are required to have an asbestos survey completed to determine the appropriate method of handling and disposal of demolition debris. Written notification to the Air Quality Management District of demolition or renovation operations on structures is required at least 10 business days prior to conducting the work, regardless of the presence or absence of asbestos in the bridge materials. Caltrans 2018 Standard Special Provision (SSP) 14-11.16 may be applicable if asbestos is present on the bridge.

Crawford recommends that the bridge be inspected by a CAC to determine if asbestos or asbestos-containing construction material are present on the bridge.

Aerially Deposited Lead

Generally, Aerially Deposited Lead (ADL) may be an issue on roads which have historically experienced significant traffic, particularly where vehicles would be stopping and idling, i.e., at a stop sign or a high congestion area. Unregulated earth material containing lead (total lead <80 mg/kg, soluble lead <5.0 mg/l) is managed under SSP 7-1.02K(6)(j)(iii); regulated earth material containing lead (total lead ≥80 mg/kg, soluble lead ≥5.0 mg/l) is managed under SSPs 14-11.08. The presence, or likely presence, of lead in soil at the project site requires a Health & Safety Plan for workers in accordance with the California Division of Occupational Safety and Health Title 8, Section 1532.1. Sanders and Larkin Roads appear to have been utilized for motor vehicle traffic throughout the entire period of leaded gasoline use (1920s into the 1980s).

Crawford recommends that soil adjacent to both Larkin Road and Sanders Road within the APE be tested for the presence of ADL at concentrations above hazardous waste limits.

Lead-Based Paint

Samples from painted surface must be collected and analyzed when the likelihood of flaking, peeling, or paint dust exists. If lead is identified at concentrations above threshold limits, painted surfaces must be handled in accordance with SSP 14-11.13.

Crawford recommends that the bridge paint system be evaluated to assess if lead is present at concentrations that exceed hazardous waste limits.

Thermoplastic Traffic String

Thermoplastic or painted traffic striping may contain heavy metals, including lead and cadmium, at concentrations exceeding hazardous waste thresholds established by the California Code of Regulations, and may produce toxic fumes when heated. If plans call for thermoplastic or painted roadway striping to be removed by cold planing, grinding, or sandblasting, the residue from this operation could contain hazardous lead concentrations. Consequently, the traffic striping within the Project Area should be tested to determine whether hazardous concentrations of lead are present. If the volume of striping material is anticipated to be small, it could be assumed to be hazardous waste and disposed of accordingly, at a Class 1 disposal facility. Painted or striped paving material that is removed and recycled is not handled as hazardous waste.

If plans call for thermoplastic or painted roadway striping to be removed by cold plaining, grinding, or sandblasting, the residual material generated by these processes may be handled using SSP 36-4 and SSP 84-9.03B if lead concentrations are nonhazardous (average concentrations <1,000 mg/kg total lead and <5 mg/L soluble lead). Residue with hazardous concentrations of lead (average concentrations ≥1,000 mg/kg total lead or ≥5 mg/L soluble lead) are handled using SSP 14-11.12.

Crawford recommends that the traffic striping material be sampled to evaluate if lead is present at concentrations that exceed hazardous waste limits.

Agricultural Chemicals

Properties adjacent to the APE have been used for orchards throughout the period of time covered by Crawford's investigation. It is possible that persistent agricultural chemicals (arsenic, organochlorine pesticides) were used on these properties, which may have impacted soil within the proposed APE.

Crawford recommends that soil within the APE be tested for the presence of persistent agricultural chemicals prior to initiating demolition and construction activities.

Chemically Treated Wood

Chemically treated wood must be handled as Treated Wood Waste (TWW) and disposed of as hazardous waste. Possible evidence of pressure-treated wood was observed in the bridge guard rails. This and other treated timber encountered during bridge demolition and replacement, e.g., buried creosote timber piles, will need to be properly handled and disposed of as TWW. Section 66261.9.5 of DTSC regulations provide Alternative Management Standards (AMS) for treated wood waste. SSP 14-11.14 for TWW is based on AMS regulations, and directs the contractor to follow the AMS, including providing training to all personnel that may come in contact with TWW. Training must include, at a minimum, safe handling; sorting and segregating; storage; labeling (including date); and proper disposal methods.

Crawford did not observe treated wood within the APE during site reconnaissance.

Naturally Occurring Asbestos

Crawford reviewed the potential for NOA in the study area by performing field reconnaissance and reviewing published geologic mapping. Geologic mapping reviewed as part of this study does not indicate ultramafic rocks or rocks suspected to contain NOA are present within the study area. Crawford did not observe rock outcrops or rock fragments that are suspected to contain NOA during site reconnaissance. Although NOA can be associated with faults, no faults are mapped within the study area.

The potential for NOA in the study area is considered low, and no further study with respect to NOA is warranted.

Petroleum Hydrocarbons

Site reconnaissance did not identify the presence of motor vehicle fuels or lubricants stored at the Project site, nor was evidence of spills or releases observed. An aboveground tank (contents unknown) was observed near the structures on Assessor's Parcel Number 10-162-004, but this tank was about 100 feet

outside the proposed APE; impact to the APE from this tank appears unlikely. Further evaluation of petroleum hydrocarbons does not appear warranted. The west end of the APE abuts the former right-of-way for the Northern Electric/Sacramento Northern Railway. No records were identified that indicated an unauthorized release of hazardous materials along this stretch of track. No rails or sleepers/ties were observed in the ROW during site reconnaissance.

The likelihood of impact to the APE from the former railway appears low, and assessment for potential impact in this portion of the APE does not appear warranted.

Transformers

Overhead utility lines (telecommunications and electricity) traverse the Project site and may need to be relocated. The scope of this assessment did not include an inventory of past and present transformers. A pole-mounted transformer was observed by Crawford about 400 feet north of the bridge on the east side of Larkin Road. This transformer appeared in good repair; no staining was observed on the transformer, pole, or the surrounding ground surface. Historically, electrical transformers have contained polychlorinated biphenyls. Identification and remediation of old transformers is the responsibility of the utility owner.

Unknown Hazardous Conditions

In case unknown hazardous conditions are encountered during construction activities, the Caltrans Unknown Hazards Procedure should be followed.

4.9.2 Hazards and Hazardous Materials (IX) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐

Less than Significant Impact.

Based on the public records, aerial photographs, and topographic maps reviewed by Crawford for proposed Project, and the site reconnaissance, Crawford makes the following recommendations, which should be implemented prior to initiating demolition and construction activities.

- The bridge should be inspected by a CAC to determine if asbestos or asbestos-containing construction material are present on the bridge.
- Soil adjacent to both Larkin Road and Sanders Road within the APE should be tested for the presence of ADL at concentrations above hazardous waste limits.
- The bridge paint system should be evaluated to assess if lead is present at concentrations that exceed hazardous waste limits.

- If plans call for thermoplastic or painted roadway striping to be removed by cold planing, grinding, or sandblasting, the traffic striping material be sampled to evaluate if lead is present at concentrations that exceed hazardous waste limits. Soil within the APE be tested for the presence of persistent agricultural chemicals at concentrations that exceed hazardous limits.
- In addition, demolition and construction activities would involve temporary use of hazardous materials, including fuel for construction equipment, paints, solvents, and lubricants. Handling of these materials would be performed in accordance with construction BMPs.

Because the Project would comply with the recommendations provided in the ISA and all laws and regulations pertaining to the use, removal, and disposal of hazardous materials, impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐

Less than Significant Impact.

See response to a), above. Impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

No Impact.

The Project site is not located within in one-quarter mile of an existing or proposed school. There would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒

No Impact.

As discussed in Section 4.9.1, the Project site is not included on any hazardous materials sites compiled pursuant to Government Code Section 65962.5. There would be no impact.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project Area?	☐	☐	☐	☒

No Impact.

There are no airports located within 2 miles of the Project site. There would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐

Less than Significant Impact.

The Sutter County Emergency Operations Plan addresses the planned response to emergency situations associated with natural disasters, technological incidents, and national security emergencies in or affecting Sutter County (Sutter County 2015). The Sutter County Office of Emergency Management provides information on emergency evacuation routes in the event of an Oroville Dam failure. Within the Project Area, the only identified emergency evacuation route is State Route 99. Persons living or working near the Project site would use the detours identified in Figure 2-5 in the event of an emergency evacuation. The proposed Project does not include any actions that would impair or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

No Impact.

The Project site is not located adjacent to any wildlands, and development of this site would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. There would be no impact.

4.9.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.10 Hydrology and Water Quality

4.10.1 Environmental Setting

4.10.1.1 Regional Hydrology

Surface Water

Sutter County is located between the Sacramento River on the west and the Feather River on the east, in the northern portion of the relatively flat Sacramento Valley. Sutter County lies entirely within the Sacramento River watershed, which includes the Feather and Bear rivers. Other notable regional hydrology features are Coon and Pleasant Grove creeks and Markham and Auburn ravines in the southeastern portion of the County and the Snake River on the east side of the Sutter Buttes. The Sutter Bypass is a major manmade flood control area that acts as an overflow collector of flood flows in the Sacramento River after passing through the Butte Slough and the Butte Sink. The Sutter Bypass starts north of Pass Road, westerly of the Sutter Buttes generally in a south-southeast orientation for about 27 miles until it intercepts the Feather River about three miles downriver from the rural community of Nicolaus (Sutter County 2010b).

Because there are no significant water storage reservoirs in Sutter County, rainfall percolates into the soil, runs off into local streams and rivers, and evaporates. By late summer, most small creeks and streams are generally dry and the rivers are at their lowest levels. Some small creeks have water during the dry season due to agricultural irrigation and drainage and/or from drainage in upstream urban areas (Sutter County 2010b).

Groundwater

Sutter County is located within the greater Sacramento Valley Groundwater Basin. There are three large subbasins that underlie most of the County: East Butte, Sutter, and North American subbasins. Portions of

smaller subbasins (Colusa, West Butte) underlie a small portion of the county on the west, generally along the Sacramento River. A portion of South Yuba basin borders the county on the east. The northern part of the County, including the Project site, is in the East Butte subbasin, which also underlies Butte County to the north. The surface area of the East Butte subbasin is 265,390 acres, approximately 53,500 acres (about one-fifth) of which are located within Sutter County. Groundwater level fluctuations for composite wells average about 4 feet during normal years and up to 10 feet during drought years. The groundwater fluctuations for wells constructed in the confined and semi-confined aquifer system average 4 feet during normal years and up to 5 feet during drought years. The southern portion of the East Butte subbasin within Sutter County is relatively stable, with seasonal fluctuations in groundwater levels of about four feet during normal precipitation years (Sutter County 2010b).

Watershed

The Project site is located within the Wadsworth Watershed. This watershed drains from the north to the south through a series of channels into the East Intercepting Canal or the West Intercepting Canal, which drain into the Wadsworth Canal, a leveed channel that flows into the Sutter Bypass channel. The West and East Intercepting Canals and the Wadsworth Canal are owned, operated, and maintained by the California Department of Water Resources. Contributing drainages include:

- Live Oak Slough (also called the RD 777 Main Canal or Live Oak Canal), which is owned, operated, and maintained by RD 777. This channel drains portions of the City of Live Oak.
- RD 777 Laterals 1, 2, and the RD 777 West Intercepting Canal (RD 777 WIC), which are owned, operated, and maintained by RD 777. This channel drains portions of the City of Live Oak.
- Morrison Slough is within the RD 2056 service area; however, the majority of Morrison Slough is located on private property, and does not receive routine maintenance by a public agency, except at public roadway crossings.
- Snake River is within the RD 2054 service area; however, the majority of the Snake River is located on private property, and does not receive routine maintenance by a public agency, except at public roadway crossings.
- Sand Creek and the Sutter City Lateral are not within a public district service area. These channels are mostly located on private property, and do not receive routine maintenance unless provided by the property owners.

4.10.1.2 Onsite Drainage

Stormwater runoff from Larkin Road drains into the Live Oak Canal. Runoff from Sanders Road drains into shallow culverts on either side of the road.

4.10.2 Regulatory Setting

4.10.2.1 State

Porter Cologne Water Quality Control Act of 1969

The Porter Cologne Water Quality Control Act, otherwise known as the California Water Code, is California's statutory authority for the protection of water quality. Under the Porter Cologne Act, the state must adopt water quality policies, plans, and objectives that protect the state's waters for the use and enjoyment of the people. The Porter Cologne Act sets forth the obligations of the SWRCB and RWQCBs pertaining to the adoption of Basin Plans and establishment of water quality objectives. It also authorizes the SWRCB and RWQCBs to issue and enforce permits containing waste discharge requirements. Basin Plans establish beneficial uses, water quality objectives, and implementation programs for each of the nine regions in California. Unlike the federal Clean Water Act, which regulates only surface water, the Porter Cologne Act regulates both surface water and groundwater.

NPDES General Permit for Construction

The SWRCB's statewide stormwater general permit for construction activity (Order 2009-0009-DWQ) approved on September 2, 2009, and effective July 1, 2010, applies to all land-disturbing construction activities that would disturb more than one acre. Construction activities subject to the general construction activity permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-storm water discharges to storm sewer systems and other waters. The permit also requires dischargers to consider the use of post-construction permanent BMPs that will remain in service to protect water quality throughout the life of the project. Types of BMPs include source controls, treatment controls, and site planning measures. Activities subject to the NPDES general permit for construction activity must develop and implement a SWPPP. The SWPPP includes a site map and description of construction activities and identifies the BMPs that will be employed to prevent soil erosion and discharge of other construction related pollutants, such as petroleum products, solvents, paints, and cement, that could contaminate nearby water resources. A monitoring program is generally required to ensure that BMPs are implemented according to the SWPPP and are effective at controlling discharges of storm water related pollutants.

4.10.3 Hydrology and Water Quality (X) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐

Less than Significant Impact.

The majority of precipitation for the area occurs during the winter months; however, adverse storm events can also occur outside of the winter. During Project construction, impacts to water resources could occur without proper controls to protect water quality and reduce impacts to soil erosion. Soil can be loosened during fill and grading and paving processes. Loosened soils and spills of fluids or fuels from construction vehicles and equipment or miscellaneous construction materials and debris could degrade surface and ground water quality. A heavy rainfall event could cause pollutants to flow offsite and reach nearby surface water drainage facilities including Live Oak Canal. The Project Area impacted would be more than one acre, making the proposed Project subject to the requirements of the statewide NPDES storm water permit for construction (Order 98-08-DWQ). A SWPPP, a required element of the NPDES, includes a listing of BMPs to prevent construction pollutants and products from violating water quality standards or waste discharge requirements. The SWPPP would be required for the proposed Project.

Additionally, Sutter County and their construction contractors would comply with all federal, state, and local regulations regarding the storage of hazardous materials during construction. Therefore, the proposed Project will have a less than significant impact on water quality. No mitigation is required.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒

No Impact.

The Project would not use groundwater during operation and would not alter groundwater recharge from the existing condition. There would be no impact.

Would the Project:	Potentially Significant 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 that would:				
i) result in substantial erosion or siltation onsite or offsite;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite;	☐	☐	☐	☒

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☐	☒
iv) impede or redirect flood flows?	☐	☐	☐	☒

Less than Significant Impact.

The potential for erosion or siltation to occur during Project construction is discussed above, and implementation of the SWPPP would ensure that this potential impact remains less than significant.

Additionally, the proposed Project would not substantially alter the Project site's existing drainage pattern or add significantly more impervious surfaces. The proposed Project would have no impact to flood flows.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?	☐	☐	☐	☒

No Impact.

The Project site is within a Federal Emergency Management Agency Special Flood Hazard Zone, but would not risk the release of pollutants during inundation (Sutter County 2010b). Upon completion, the Project would operate like the existing condition. There would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

No Impact.

As stated above, the proposed Project would be required to comply with SWPPP and NPDES regulations and would not obstruct or conflict with water quality control or sustainable groundwater management plans. There would be no impact.

4.10.4 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.11 Land Use and Planning

4.11.1 Environmental Setting

Sutter County's land use pattern is rural in nature with a landscape dominated by extensive agricultural areas, significant natural and recreational resources, and relatively low population density. Exceptions are land uses within the two incorporated cities of Yuba City and Live Oak that contain the bulk of the urban-type land uses within the County, such as residences, commercial and industrial uses, parks, and public facilities (Sutter County 2010b). The Project site is located within Sanders Road and Larkin Road and is surrounded by land use designations of 20-acre minimum agriculture (AG-20). Surrounding areas are zoned agricultural (AG). The surrounding areas are also designated lands to be conserved in agricultural, open space, and related uses.

4.11.2 Land Use and Planning (XI) Environmental Checklist and Discussion

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

No Impact.

The Project proposes to replace an existing bridge with a low sufficiency rating with improved infrastructure. Detours for local residents would be required during construction, as shown in Figure 2-5. Upon completion of the Project, local residents would have access to the same routes as current conditions. There would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

No Impact.

The Project would not conflict with any plans, policies, or regulations. There would be no impact.

4.11.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.12 Mineral Resources

4.12.1 Regulatory Setting

Minerals are defined as any naturally occurring chemical elements or compounds formed by inorganic processes and organic substances. Minable minerals are defined as a deposit of ore or minerals having a value materially in excess of the cost of developing, mining, and processing the mineral and reclaiming the Project Area. The conservation, extraction, and processing of mineral resources is essential to meeting the needs of society.

Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act of 1975 (SMARA) states that cities and counties shall adopt ordinances "…that establish procedures for the review and approval of reclamation plans and financial assurances and the issuance of a permit to conduct surface mining operations…" (PRC Section 2774). The intent of this legislation is to ensure the prevention or mitigation of the adverse environmental impacts of mining, the reclamation of mined lands, and the production and conservation of mineral resources are consistent with recreation, watershed, wildlife, and public safety objectives (PRC Section 2712).

SMARA requires the State Geologist to classify land into Mineral Resource Zones (MRZs) according to the known or inferred mineral potential of that land. The process is based solely on geology, without regard to existing land use or land ownership. The primary goal of mineral land classification is to ensure that the mineral potential of land is recognized by local government decision makers and considered before land use decisions, which could preclude mining, are made. Areas subject to California mineral land classification studies are divided into the following Mineral Resource Zone (MRZ) categories that reflect varying degrees of mineral potential:

- MRZ-1: Areas of no mineral resource significance
- MRZ-2: Areas of identified mineral resource significance
- MRZ-3: Areas of undetermined mineral resource significance
- MRZ-4: Areas of unknown mineral resource significance

4.12.2 Mineral Resources (XII) Environmental Checklist and Discussion

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

No Impact.

According to Mineral Land Classification maps located on the Department of Conservation website, the Project site is not located in an MRZ. The proposed Project would not 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. There are no mining activities being conducted on or near the site and no mining activities are planned for the site. Therefore, no impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

No impact.

See answer to 4.12.2 a). There would be no impact.

4.12.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.13 Noise

The purpose of this section is to estimate Project-generated noise levels and determine the level of impact the Proposed Project would have on the environment. This section describes the existing environmental and regulatory conditions specific to noise and addresses the potential impact posed by the proposed Project. Noise modeling conducted by ECORP is included with this Initial Study as Appendix H (ECORP 2022f).

4.13.1 Environmental Setting

4.13.1.1 Noise Fundamentals

Noise is generally defined as sound that is loud, disagreeable, or unexpected. The selection of a proper noise descriptor for a specific source is dependent on the spatial and temporal distribution, duration, and fluctuation of the noise. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise include the average hourly noise level (in L_{eq}) and the average daily noise levels/community noise equivalent level (in L_{dn}/CNEL). The L_{eq} is a measure of ambient noise, while the L_{dn} and CNEL are measures of community noise. Each is applicable to this analysis and defined as follows:

- **Equivalent Noise Level (Leq)** is the average acoustic energy content of noise for a stated period of time. Thus, the Leq of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.

- **Day-Night Average (Ldn)** is a 24-hour average Leq with a 10-dBA "weighting" added to noise during the hours of 10:00 pm to 7:00 am to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour Leq would result in a measurement of 66.4 dBA Ldn.
- **Community Noise Equivalent Level (CNEL)** is a 24-hour average Leq with a 5-dBA weighting during the hours of 7:00 pm to 10:00 pm and a 10-dBA weighting added to noise during the hours of 10:00 pm to 7:00 am to account for noise sensitivity in the evening and nighttime, respectively.

Noise can be generated by a number of sources, including mobile sources, such as automobiles, trucks and airplanes, and stationary sources, such as construction sites, machinery, and industrial operations.

Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 dB for each doubling of distance from a stationary or point source. Sound from a line source, such as a highway, propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately 3 dB for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics (Federal Highway Administration [FHWA] 2011). Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed (FHWA 2011).

The manner in which older structures in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows (Caltrans 2002). The exterior-to-interior reduction of newer structures is generally 30 dBA or more (Harris Miller Miller & Hanson Inc. 2006).

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60- to 70-dBA range, and high, above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80

dBA). Regarding increases in dBA, the following relationships should be noted in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1.0 dBA cannot be perceived by humans.
- Outside of the laboratory, a 3.0-dBA change is considered a just-perceivable difference.
- A change in level of at least 5.0 dBA is required before any noticeable change in community response would be expected. An increase of 5.0 dBA is typically considered substantial.
- A 10.0-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

Sensitive Noise Receptors

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as parks, historic sites, cemeteries, and recreation areas are considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses. The Project Site is located between agriculture land uses and residences. The closest single-family residences is located 300 feet west of the Project site, south of Sanders Road. Another single-family residence is located 900 feet east of the Project site, north of Sanders Road. These are considered sensitive noise receptors.

Vibration Sources and Characteristics

Ground vibration can be measured several ways to quantify the amplitude of vibration produced, including through peak particle velocity or root mean square velocity. These velocity measurements measure maximum particle at one point or the average of the squared amplitude of the signal, respectively.

Vibration impacts on people can be described as the level of annoyance and can vary depending on an individual's sensitivity. Generally, low-level vibrations may cause window rattling but do not pose any threats to the integrity of buildings or structures.

Existing Ambient Noise Environment

The Project site is located in Sutter County and is impacted by noise sources typical to the rural areas of the County. According to the Sutter County General Plan, the main land use is for agriculture, but the county also contains residential, industrial, commercial, recreational, and open space areas uses. Within the area, the most common noise sources including motor vehicle traffic, agricultural activity, airplane traffic, railroads, and stationary sources like food processing plants. At the Project Site, the existing main sources of noise will be car traffic, residential and agricultural noises.

The American National Standards Institute (ANSI) Standard 12.9-2013/Part 3 "Quantities and Procedures for Description and Measurement of Environmental Sound – Part 3: Short-Term Measurements with an Observer Present" provides a table of approximate background sound levels in L_{dn}, daytime L_{eq}, and nighttime L_{eq}, based on land use and population density. The ANSI standard estimation divides land uses into six distinct categories. Descriptions of these land use categories, along with the typical daytime and nighttime levels, are provided in Table 4.13-1. At times, one could reasonably expect the occurrence of periods that are both louder and quieter than the levels listed in the table. ANSI notes, "*95% prediction interval [confidence interval] is on the order of +/- 10 dB*." The Project Area would likely be considered ambient noise Category 4 or 5.

Table 4.13-1. ANSI Standard 12.9-2013/Part 3 A-weighted Sound Levels Corresponding to Land Use and Population Density

Category	Land Use	Description	People per Square Mile	Typical L_{dn}	Daytime L_{eq}	Nighttime L_{eq}
1	Noisy Commercial & Industrial Areas and Very Noisy Residential Areas	Very heavy traffic conditions, such as in busy, downtown commercial areas; at intersections for mass transportation or other vehicles, including elevated trains, heavy motor trucks, and other heavy traffic; and at street corners where many motor buses and heavy trucks accelerate.	63,840	67 dBA	66 dBA	58 dBA
2	Moderate Commercial & Industrial Areas and Noisy Residential Areas	Heavy traffic areas with conditions similar to Category 1, but with somewhat less traffic; routes of relatively heavy or fast automobile traffic, but where heavy truck traffic is not extremely dense.	20,000	62 dBA	61 dBA	54 dBA
3	Quiet Commercial, Industrial Areas and Normal Urban & Noisy Suburban Residential Areas	Light traffic conditions where no mass-transportation vehicles and relatively few automobiles and trucks pass, and where these vehicles generally travel at moderate speeds; residential areas and commercial streets, and intersections, with little traffic, compose this category.	6,384	57 dBA	55 dBA	49 dBA
4	Quiet Urban & Normal Suburban Residential Areas	These areas are similar to Category 3, but for this group, the background is either distant traffic or is unidentifiable; typically, the population density is one-third the density of Category 3.	2,000	52 dBA	50 dBA	44 dBA

Table 4.13-1. ANSI Standard 12.9-2013/Part 3 A-weighted Sound Levels Corresponding to Land Use and Population Density

Category	Land Use	Description	People per Square Mile	Typical L_{dn}	Daytime L_{eq}	Nighttime L_{eq}
5	Quiet Residential Areas	These areas are isolated, far from significant sources of sound, and may be situated in shielded areas, such as a small wooded valley.	638	47 dBA	45 dBA	39 dBA
6	Very Quiet Sparse Suburban or rural Residential Areas	These areas are similar to Category 4 but are usually in sparse suburban or rural areas; and, for this group, there are few if any nearby sources of sound.	200	42 dBA	40 dBA	34 dBA

Source: The American National Standards Institute (ANSI) 2013

4.13.2 Noise (XIII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐

Less than Significant Impact.

As previously described, noise-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would each be considered noise sensitive and may warrant unique measures for protection from intruding noise. The Project site is zoned for Agricultural Use, yet nearby there are residences, which can be considered noise-sensitive receptors.

4.13.2.1 Construction Noise Impacts

Construction noise associated with the Proposed Project would be temporary and would vary depending on the specific nature of the activities being performed. Noise generated would primarily be associated with the operation of off-road equipment for onsite construction activities as well as construction vehicle traffic on area roadways. Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g., site preparation, excavation, paving). Noise generated by construction equipment, including earth movers, pile drivers, and portable generators, can reach high levels. Typical operating cycles for these types of construction equipment may involve one or two minutes

of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). During construction, exterior noise levels could negatively affect sensitive land uses in the vicinity of the construction site. In the case of this project, the closest noise-sensitive residences are 300 feet west of the Project site and 900 feet east of the Project site.

Chapter 11, *Noise*, Policy N1.6 of the Sutter County General Plan limits noise-generating "construction-related" activities within 1,000 feet of noise-sensitive uses (i.e., residential uses, daycares, schools, convalescent homes, and medical care facilities) to daytime hours between 7:00 A.M. and 6:00 P.M. on weekdays, 8:00 A.M. and 5:00 P.M. on Saturdays, and prohibits such activity on Sundays and holidays unless permission for the latter has been applied for and granted by the County. The County does not promulgate a numeric threshold pertaining to the noise associated with construction. This is because construction noise is temporary, short term, intermittent in nature, and would cease on completion of the Project.

To estimate the worst-case onsite construction noise levels that may occur at the nearest noise-sensitive receptors and in order to evaluate the potential health-related effects (physical damage to the ear) from construction noise, the construction equipment noise levels were calculated using the Federal Highway Administration's Roadway Noise Construction Model and compared against the construction-related noise level threshold established in the Criteria for a Recommended Standard: Occupational Noise Exposure prepared in 1998 by the National Institute for Occupational Safety and Health (NIOSH, 1998). A division of the U.S. Department of Health and Human Services, NIOSH identifies a noise level threshold based on the duration of exposure to the source. The NIOSH construction-related noise level threshold starts at 85 dBA for more than 8 hours per day; for every 3-dBA increase, the exposure time is cut in half. This reduction results in noise level thresholds of 88 dBA for more than 4 hours per day, 92 dBA for more than 1 hour per day, 96 dBA for more than 30 minutes per day, and up to 100 dBA for more than 15 minutes per day. For the purposes of this analysis, the lowest, more conservative threshold of 85 dBA L_{eq} is used as an acceptable threshold for construction noise at the nearby sensitive receptors.

The anticipated short-term construction noise levels generated for the necessary equipment is presented in Table 4.13-2**.** As previously stated, the nearest noise sensitive land uses to the Project site are residences located approximately 300 feet distant from the Project site.

Table 4.13-2. Construction Average (dBA) Noise Levels at Nearest Residential Receptors			
Equipment	**Estimated Exterior Construction Noise Level at Closest Residences (dBA)**	**Construction Noise Standards (dBA L_{eq})**	**Exceeds Standards?**
Demolition	70.9	*85*	**No**
Site Prep	72.1	*85*	**No**
Building Construction	72.6	*85*	**No**
Paving	72.1	*85*	**No**

Notes: Construction equipment used during construction derived from the Roadway Construction Emissions Model (RCEM). RCEM contains default construction equipment and usage parameters for typical roadway construction projects.
L_{eq} = The equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
Source: Construction noise levels were calculated by ECORP Consulting using the FHWA Roadway Noise Construction Model (FHWA 2006). Refer to Appendix H for Model Data Outputs.

As shown in Table 4.13-2, Project onsite construction activities would not exceed the NIOSH threshold of 85 dBA L_{eq} at the nearest noise-sensitive receptors.

4.13.2.2 Operational Noise Impacts

Because the proposed Project involves the replacement of a canal bridge, there will be no operational component of this project. Upon completion of the Project, it would not attract new stationary or mobile sources of noise beyond what is currently experienced. The proposed Project would have no noise impact once Project construction is complete.

For the reasons listed above, this impact is less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in generation of excessive ground-borne vibration or ground-borne noise levels?	☐	☐	☒	☐

Less than Significant Impact.

4.13.2.3 Construction Vibration Impacts

Excessive groundborne vibration impacts result from continuously occurring vibration levels. Increases in groundborne vibration levels attributable to the Proposed Project would be primarily associated with short-term construction-related activities. Construction on the Project Site would have the potential to

result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance.

Construction-related ground vibration is normally associated with impact equipment such as pile drivers, jackhammers, and the operation of some heavy-duty construction equipment, such as dozers and trucks. It is not anticipated that pile drivers would be necessary during Project construction. Vibration decreases rapidly with distance, and it is acknowledged that construction activities would occur throughout the Project Site and would not be concentrated at the point closest to sensitive receptors.

Sutter County has vibrational thresholds for construction, outlined in Table 3.13-3, and are compared to the calculated Receiver Vibration Decibels shown in Table 3.13-4. Chapter 11, *Noise*, Policy N1.7 of the Sutter County General Plan requires construction projects and new development anticipated to generate a significant amount of vibration to ensure acceptable interior vibration levels at nearby noise-sensitive uses using the standards presented in Table 4.13-3. These standards are based on criteria from the Federal Transit Administration as follows.

Table 4.13-3. Sutter County Groundborne Vibration Impact Criteria

Land Use Category	Impact Levels (VdB)		
	Frequent Events[a]	Occasional Events[b]	Infrequent Events[c]
Category 1: Buildings where vibration would interfere with interior operations	65[d]	65[d]	65[d]
Category 2: Residences and buildings where people normally sleep	72	75	80
Category 3: Institutional land uses with primarily daytime uses	75	78	83

Notes: Vibration levels are measured in or near the vibration-sensitive use.
a. "Frequent Events" is defined as more than 70 vibration events of the same source per day.
b. "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.
c. "Infrequent Events" is defined as fewer than 30 vibration events of the same source per day.
d. This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels.
Source: Federal Transit Administration (FTA) 2018; Sutter County General Plan 2011

It is acknowledged that construction activities would occur throughout the Project Site and would not be concentrated at the point closest to the nearest structure. The nearest structure to the Project site is a residence located approximately 300 feet distant. In reference to Table 4.13-3, the land uses surrounding the Project site can be considered a Category 2 land use because it is partly residential. Due to the nature of the Project, the impact levels for *frequent events* will be used for the proposed Project's construction of the canal bridge. It is noted that this can be classified as *frequent* because although the construction is temporary (lasting around 5 months), the construction's vibrational impacts will be consistent and frequent throughout those 5 months. With a Category 2 and *frequent events* classification, the impact

events cannot exceed 72 VdB. Groundborne vibration levels associated with construction equipment are summarized in Table 4.13-4.

Table 4.13-4. Typical Construction Equipment Vibration Levels at 300 feet

Equipment Type	Receiver Vibration Decibels (VdB)
Vibratory Roller	61.6
Hoe Ram (Rock Breaker)	54.6
Large Bulldozer	54.6
Caisson Drilling	54.6
Loaded Trucks	53.6
Jackhammer	46.6
Small Bulldozer/Tractor	25.6
Peak Vibration	**61.6**

Source: FTA 2018

As shown in Table 4.13-4, the peak vibration decibel level 300 feet away from construction equipment is 61.6 VdB. As previously mentioned, ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. As a result, the residence located 300 feet away from the Project Site is calculated to experience vibrations below the County's threshold levels and therefore would not be negatively affected. This impact is less than significant.

4.13.2.4 Operation Vibration Impacts

Upon completion of the proposed Project, the Project site would not include the use of any stationary equipment beyond current conditions that would result in excessive groundborne vibration levels. For this reason, no impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) For a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project Area to excessive noise levels?	☐	☐	☐	☒

No Impact.

The Project site is located approximately 5.4 miles northwest of the closest airport, Sutter County Airport. Aircraft noise does not significantly impact the Project Site area and would not expose people visiting or working on the Project Site to excess airport noise levels. There would be no impact.

4.13.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.14 Population and Housing

4.14.1 Population and Housing (XIV) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒

No Impact.

The proposed Project would replace an existing bridge and would not induce population growth. There would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

No Impact.

The Project would not displace any local residents. There would be no impact.

4.14.2 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.15 Public Services

4.15.1 Environmental Setting

4.15.1.1 Police Services

The Sutter County Sheriff's Department provides police protection services within unincorporated Sutter County and the City of Live Oak. The Sutter County Sheriff's Department operates two stations: dispatch center located at 1077 Civic Center Boulevard, Yuba City, and substation located at 9867 O Street, Live Oak.

The California Highway Patrol (CHP) has a mutual aid agreement with the Sutter County Sheriff's Department and the Yuba City Police Department to respond with backup units as needed. All dispatch calls are routed through the Chico CHP dispatch center.

4.15.1.2 Fire Services

Fire protection and emergency services for Sutter County are provided by four County Service Areas (CSA) and two independent fire protection districts. CSA-F (Oswald-Tudor Fire Station) serves the Project site and surrounding area. CSA-F covers rural and urban areas in the northern and central portions of the county including the city of Live Oak, the rural community of Sutter, and area south of Yuba City. CSA-F includes three stations – Live Oak Fire Station, Sutter Fire Station, and Oswald-Tudor Fire Station. Live Oak Fire Station, located at 2745 Fir St, Live Oak, is nearest the Project site.

4.15.1.3 Schools

Encinal Elementary School is 1.5 miles north of the Project site and Nuestro Elementary School is 1.5 miles southwest of the Project site.

4.15.1.4 Parks

There are several parks and river recreation areas within the County, but none within the vicinity of the Project site.

4.15.2 Public Services (XV) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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:	☐	☐	☐	☒
Fire Protection?	☐	☐	☐	☒
Police Protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other Public Facilities?	☐	☐	☐	☒

No Impact.

The proposed Project would not result in the need for new or physically altered government facilities. The County would coordinate the construction schedule with police, fire, and emergency response units prior to the start of construction. There would be no impact.

4.15.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.16 Recreation

4.16.1 Recreation (XVI) Materials Checklist

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒

No Impact.

The proposed Project would not substantially increase the residential population of the City; therefore there would not be a significant increase in the use of existing parks. There would be no impact to existing recreational facilities.

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

No Impact.

The proposed project would not include or require recreational facilities or the expansion of existing facilities. There would be no impact.

4.16.2 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.17 Transportation

4.17.1 Environmental Setting

4.17.1.1 Sanders Road

Sanders Road is a two-lane asphalt road, approximately 18 feet wide with graded shoulders on both sides, classified as a Local Road per Caltrans CRS Maps. Sanders Road does not have a posted speed limit and should be assumed vehicles are traveling 55 mph or faster as they approach the 2-way stop-controlled intersection at Larkin Road. The current Average Daily Traffic (ADT) of Sanders Road is approximated to be less than 400 vehicles per day (R.E.Y. 2022).

4.17.1.2 Larkin Road

Larkin Road is a two-lane asphalt road, approximately 20 feet wide with graded shoulders on both sides, classified as a Major Collector. Larkin Road has a posted speed limit of 55 mph through the Project limits. The ADT of Larkin Road is approximated to be less than 1,160 vehicles per day (R.E.Y. 2022).

4.17.2 Transportation (XVII) Environmental Checklist and Discussion

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

Less than Significant Impact.

Short-term construction trips would include the transfer of construction equipment, construction worker trips, and hauling trips for construction materials; however, impacts in this regard would be temporary in nature and would cease upon Project completion. Long-term operation of the Project would not generate an increase in vehicle trips that would adversely affect the circulation system; no impacts would occur. No Project components would require removal of vehicular lanes such that capacity would be reduced, or that would affect transit service. Therefore, impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	☐	☐	☐	☒

No Impact.

The Project would not generate any net new trips during operation and would therefore be screened from VMT analysis. There would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒

No Impact.

As described in Section 2.1 *Project Background and Objectives*, the County is proposing to replace the bridge due to low sufficiency rating and poor intersection geometry. The new structure would allow truck turning for California Legal Trucks to and from Larkin Road onto Sanders Road. The Project would improve geometric design over current condition.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Result in inadequate emergency access?	☐	☐	☒	☐

Less than Significant Impact.

The Project site is within Evacuation Zone 7 within Sutter County. Zone 7 occupants are directed to evacuate south to Sacramento, West on HWY 20 through Colusa to I-5 or southwest on Hwy 113 through Knight's Landing to I-5 in the case of an emergency evacuation. The County would coordinate the construction schedule with police, fire, and emergency response units prior to the start of construction. The Project site and residences on Sanders Road within the road closure area between Broadway and Larkin Road would be adequately served by the detours as shown in Figure 2-5. Impacts would be less than significant.

4.17.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.18 Tribal Cultural Resources

This section describes the affected environment and regulatory setting for Tribal Cultural Resources (TCRs) in the Project Area. TCRs are defined as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe. The following analysis of the potential environmental impacts related to TCRs is derived primarily from the following sources:

- California NAHC Sacred Lands File Search, August 1, 2022;
- Records search at the Northeast Information Center (NEIC) of the California Historical Resources Information System at California State University-Chico on August 1, 2022 (NEIC search #D22-305);
- CONFIDENTIAL *Cultural Resources Inventory and Evaluation Report for the Live Oak Canal Bridge Replacement* (ECORP 2022e);
- Ethnographic overview of the Project Area;
- In the absence of tribes that requested formal consultation, the record of Informal tribal communication between the County of Sutter and culturally affiliated Native American tribes.

4.18.1 Environmental Setting

4.18.1.1 Ethnography

Prior to the arrival of European-Americans in the region, Indigenous groups speaking more than 100 different languages and occupying a variety of ecological settings inhabited California. Kroeber (1925, 1936), and others (i.e., Driver 1961; Murdock 1960), recognized the uniqueness of California's Indigenous groups and classified them as belonging to the California culture area. Kroeber (1925) further subdivided California into four subculture areas: Northwestern, Northeastern, Southern, and Central.

When the first European explorers entered the regions between 1772 and 1821, an estimated 100,000 people, about a third of the state's native population, lived in the Central Valley (Moratto 1984). At least seven distinct languages of Penutian stock were spoken among these populations: Wintu, Nomlaki, Konkow, River Patwin, Nisenan, Miwok, and Yokuts. Common linguistic roots and similar cultural and technological characteristics indicate that these groups shared a long history of interaction (Rosenthal et al. 2007). The Central area (as defined by Kroeber 1925) encompasses the current Project Area and includes the Nisenan or Southern Maidu.

Ethnographically, the Project Area is in the territory occupied by the Penutian-speaking Nisenan and Konkow groups. Both of these groups spoke versions of a Penutian language classified as Maidu by Shipley (1963); Nisenan have also been referred to as Southern Maidu and Konkow as Northwestern Maidu based on their linguistic dispersion (Riddell 1978). As with most pre-contact populations, tribal boundaries were not static, but rather, were plastic and constantly changing in part as a reflection of resource exploitation patterns (Nilsson 1985) or changes in socio-political relationships between groups.

Nisenan

As a language group, Nisenan (meaning *from among us* or *of our side*) are members of the Maiduan Family of the Penutian stock and are generally divided into three groups based on dialect differences: the Northern Hill (mountain) Nisenan in the Yuba River drainage, the Valley Nisenan along the Sacramento River, and the Southern Hill (foothills) Nisenan along the American River (Beals 1933; Kroeber 1925; Wilson and Towne 1978). Individual and extended families "owned" hunting and gathering grounds, and

trespassing was discouraged (Kroeber 1925; Wilson and Towne 1978). Residence was generally patrilocal, but couples actually had a choice in the matter (Wilson and Towne 1978).

The basic social and economic group for the Nisenan was the family or household unit. The nuclear and/or extended family formed a corporate unit. These basic units were combined into distinct village or hamlet groups, each largely composed of consanguine relatives (Beals 1933; Littlejohn 1928). Lineage groups were important political and economic units that combined to form tribelets, which were the largest sociopolitical unit identified for Nisenan (Wilson and Towne 1978). Each tribelet had a chief or headman who exercised political control over all villages within it. Villages typically included family dwellings, acorn granaries, a sweathouse, and a dance house, owned by the chief. The role of chief seems to have been an advisory role with little direct authority (Beals 1933) but with the support of the shaman and the elders, the word of the chief became virtually the law (Wilson and Towne 1978). Tribelets assumed the name of the head village where the chief resided (Beals 1933; Levy 1978).

The office of tribelet chief was hereditary, with the chieftainship being the property of a single patrilineage within the tribelet. Tribelet populations of Valley Nisenan were as large as 500 persons (Wilson and Towne 1978), while foothill and mountain tribelets ranged between 100 and 300 persons (Littlejohn 1928; Levy 1978). Each tribelet owned a bounded tract of land and exercised control over its natural resources (Littlejohn 1928). Beals (1933) estimated that Nisenan tribelet territories averaged approximately 10 miles along each boundary, or 100 square miles, with foothill territories tending to encompass more area than mountain territories. Littlejohn (1928) noted that in many instances, these boundaries were indicated by piles of stones. Regardless, Nisenan groups tended to stay within their village areas except during the summer season when groups of people would sojourn into the mountains to hunt and gather (Littlejohn 1928).

Nisenan practiced seasonal migration, a subsistence strategy involving moving from one area or elevation to another to harvest plants, fish, and hunt game across contrasting ecosystems that were in relatively close proximity to each other. Valley Nisenan generally did not range beyond the valley and lower foothills, while foothill and mountain groups ranged across a more extensive area that included jointly shared territory whose entry was subject to traditional understandings of priority of ownership and current relations between the groups (d'Azevedo 1963).

During most of the year, Nisenan usually lived in permanent villages located below about 2,500 feet that generally had a southern exposure, were surrounded by an open area, and were located above, but close to, watercourses (Littlejohn 1928). The rather large uninhabited region between the 3,000-foot contour and the summit of the Sierra Nevada was considered “open ground” that was only used by communities living along its edge (Littlejohn 1928). Beals (1933) noted that permanent villages in the foothills and mountains were usually located on high ground between rivers. Valley villages were also usually located on raised areas to avoid flooding. Littlejohn (1928) stated that at one time or another there were settlements located on every small stream within Nisenan territory, but permanent villages were not located in steep, dark, narrow canyons of large rivers, or at altitudes where deep snows persisted throughout the winter. In fact, permanent occupation sites above 3,500 feet were only located in protected valleys (Littlejohn 1928).

The availability of resources influenced the location of Nisenan permanent villages because they acquired a proportion of their food resources from the general area surrounding them (Littlejohn 1928; Wilson and Towne 1978). Other essential and critical food resources were obtained during the summer, when small base camps were established at higher altitudes in proximity to a water source. Individuals would stage expeditions to acquire natural, faunal, and plant resources from these camps (Littlejohn 1928; Wilson and Towne 1978).

Communally organized Nisenan task groups exploited a wide variety of resources. Communal hunting drives were undertaken to obtain deer, quail, rabbits, and grasshoppers. Bears were hunted in the winter when their hides were at their best condition. Runs of salmon in the spring and fall provided a regular supply of fish, while other fish such as suckers, pike, whitefish, and trout were obtained with snares, fish traps, or with various fish poisons such as soaproot (Beals 1933; Faye 1923; Wilson and Towne 1978). Birds were caught with nooses or large nets, and were also occasionally shot with bow and arrow. Game was prepared by roasting, baking, or drying. In addition, salt was obtained from a spring near modern-day Rocklin (Wilson and Towne 1978).

Acorns were gathered in the fall and stored in granaries for use during the rest of the year. Although acorns were the staple of the Nisenan diet, they also harvested roots like wild onion and "Indian potato," which were eaten raw, steamed, baked, or dried and processed into flour cakes to be stored for winter use (Wilson and Towne 1978). Buckeye, pine nuts, hazelnuts, and other edible nuts further supplemented the diet. Key resources such as acorns, salmon, and deer were ritually managed through ceremonies to facilitate successful exploitation and equitable distribution of resources (Beals 1933; Swezey 1975; Swezey and Heizer 1977).

Trade was important with goods traveling from the coast and valleys up into the Sierra Nevada mountains and beyond to the east, and vice versa. Coastal items like shell beads, salmon, salt, and foothill pine nuts were traded for resources from the mountains and farther inland, such as bows and arrows, deer skins, and sugar pine nuts. In addition, obsidian was imported from the north (Wilson and Towne 1978).

Nisenan built residential dwellings, ceremonial structures, semi-subterranean sweat lodges, and menstruation huts (Wilson and Towne 1978). The typical hill and mountain dwelling was the conical bark house made by overlapping three or four layers of bark with no interior support. A thatched house was used at lower elevations, consisting of a conical framework of poles that was covered by brush, grass, or tules. Semi-subterranean earth lodge roundhouses were also built by hill and mountain groups and used for ceremonial gatherings, assemblies, local feasts, and for housing visitors (Beals 1933; Levy 1978).

Flaked and ground stone tools were common among the Nisenan and included knives, arrow and spear points, club heads, arrow straighteners, scrapers, rough cobble and shaped pestles, bedrock mortars, grinding stones (metates), pipes, charms, and short spears (Barrett 1917; Beals 1933; Voegelin 1942; Wilson and Towne 1978). Beals (1933) also noted that certain colored stone points were considered "lucky," and could be traded for four or five other projectile points. In addition, obsidian was highly valued and imported. Nisenan informants stated that obsidian only came from a place to the north, outside of Nisenan territory (Littlejohn 1928:32). Littlejohn (1928) also noted that soapstone was used for bowl

mortars, although informants of Wilson and Towne (1978) claimed that neither they nor their ancestors made mortars.

Nisenan groups managed many wild plants, primarily by controlled burning, which removed underbrush and encouraged growth of edible grasses, seed producing plants, and other useful plant resources (e.g., basketry materials; Blackburn and Anderson 1993). The use of fire for environmental modification and as an aid in hunting is frequently mentioned in the ethnographic literature relating to the Nisenan. Littlejohn (1928) noted that the lower foothills in the Valley oak zone were thickly covered with herbaceous vegetation that was annually burned by the Nisenan to remove and limit its growth while facilitating the growth of oaks for harvesting acorns. The annual fires destroyed seedlings, but did not harm established oak trees. Beals (1933) also noted that the Nisenan regularly burned the land, primarily for the purpose of driving game, and consequently created much more open stands of timber than currently exist in the area. Beals (1933) informants stated that before their traditional burning regimes were halted by Euro-Americans, "it was often a mile or more between trees on the ridges." In addition to removing underbrush, improving travel conditions, and facilitating plant growth, burning may also have improved areas of deer forage, potentially altering migratory patterns of deer populations by lessening their need to seek fresh forage on a seasonal basis (Matson 1972).

Like most indigenous cultures, Nisenan groups had a holistic epistemology; a theorem of holistic knowledge in which any subject is a composite of all other subjects, and every aspect of knowledge is interconnected. The Nisenan world contained many ineffable supernatural beings and spirits, and all natural objects were endowed with potential supernatural powers (Beals 1933).

The Spanish arrived on the central California coast in 1769. Early contact with the first Spanish explorers to enter California was limited to the peripheries of Nisenan territory; they occurred mainly to the south on lands of the Miwok, which had been explored by José Canizares in 1776, with only ephemeral explorations into Nisenan lands. There are no records of Nisenan groups being removed to the missions. They did, however, receive escapees from the missions, as well as pressure from displaced Miwok populations on their southern borders. The first known occupation by European-Americans was marked by American and Hudson Bay Company fur trappers in the late 1820s establishing camps in Nisenan territories. This occupation was thought to have been peaceful (Wilson and Towne 1978).

The mountain Nisenan groups encountered European-Americans in their territory, but were not adversely affected by the epidemics and early settlers. The discovery of gold, however, led to their territory being overrun within a matter of a few years. James Marshal's 1848 gold discovery was in the middle of Nisenan territory, and thousands of miners were soon living in the area. This dynamic led to widespread killing, destruction, and persecution of the Nisenan and their culture. The few survivors were relegated to working in agriculture, logging, ranching, or domestic pursuits (Wilson and Towne 1978). A native culture resurgence occurred around 1870 with influence from the Ghost Dance revival, but by 1890s the movement had all but ended in dissolution. By the time of the Great Depression, it was said that no living Nisenan could remember a time before White contact (Wilson and Towne 1978).

The turn of the century was fraught with deplorable conditions for the surviving Nisenan populations, marked by low educational attainment, high unemployment, poor housing and sanitation, and prevalence

of alcoholism. The 1960 U.S. Census (California State Advisory Commission of Indian Affairs 1966 as cited in Wilson and Towne 1978) reported 1,321 Native Americans resided in the counties originally held as Nisenan territory, but none had tribal affiliation. Sacramento County listed 802 Native Americans, of which only four were known descendants of the Valley Nisenan. El Dorado, Placer, Yuba, and Nevada counties had several Nisenan families in the 1970s who were descended from mountain groups and could speak the language and retained knowledge of traditional lifeways (Wilson and Towne 1978).

A few people still practiced Nisenan customs through the turn of the 21st century, and despite the hardships on their people through the past few centuries, many modern Native American populations participate in pan-Indian activities and celebrations. Nisenan descendants continue to be active in social movements and organizations that seek to improve the Native American situation in the dominant American culture.

Konkow

The current Project Area also falls within the ethnographic tribal territory of the Konkow, or Northwestern Maidu, in the Northern Sacramento Valley and surrounding foothills of the Sierra Nevada range. The Maidu, on the basis of cultural and linguistic differences, have been differentiated into three major related divisions: the Northeastern (Mountain Maidu), Northwestern (Konkow), and Southern (Nisenan) (Dixon 1905; Kroeber 1925).

The Maidu and Konkow languages and associated dialects are members of the Maiduan language family of the California Penutian Linguistic Stock. Unlike the Maidu whose dialects were unique to each of the four major regions of occupation, the Konkow spoke a large number of dialects, with each settlement area supporting more than one dialect (Shipley 1978). The Konkow referred to themselves as *ko'yo-mkawi*, or "meadowland" (Hodge 1910; Riddell 1978).

The Konkow were observed by early ethnographers to occupy territory immediately adjacent to the southwest of the Mountain Maidu, along the Feather and Sacramento rivers, to their southern boundary at the Sutter Buttes. The Konkow were primarily located in the lower elevations of the Sierra Nevada and along the valley floor, in a climate characterized by a wet winter with occasional fog and freezing temperatures, and a dry summer season. The habitat was savannah-like with grasses and oaks, and several village communities were noted: *Kewsayoma'a, Yinomma'a,* and *Totoma'a*. Most Konkow in the valley did not venture far from their homes into the neighboring territories (Riddell 1978).

The village community, the primary settlement type among the Maidu-Konkow, consisted of three to five small villages, each composed of about 35 members. Among the mountain Maidu, village communities were well defined, and based on geography. In contrast, the Konkow were dispersed throughout the valley floor along river canyons, and as a result, village communities were less concentrated or definable (Kroeber 1925). In terms of permanent occupation sites, both groups preferred slightly elevated locations that provided visibility of the surrounding area and were away from the water-laden marshes and meadows (Dixon 1905; Riddell 1978; Riddell and Pritchard 1971). Konkow settlements along the Feather, Yuba, and American river canyons were situated high above the rivers on the ridges, or partway down the canyon side, mainly for defense purposes. Dwellings consisted of conical bark structures or semi-subterranean dwellings called *kuns* (Riddell 1978).

Ethnographic accounts of Konkow political structure describe that the group headman of the village was chosen through a shaman who conveyed the voice of the spirits to the village. The headman was chosen for maturity, wealth, ability, and generosity. He played a relatively minor role in the village community, acting more as an advisor than a leader. He was also responsible to a councils of elders of the *Kuksu* cult (like their Nisenan neighbors, Konkow also practiced the *Kuksu* cult). The headman had special rights to the ceremonial lodge as his place or residence and it was often burned at his death. He could declare war and lead the tribe in to battle. He directed communal activities such as deer drives, ceremonies, and gathering. He could also be removed from his position by the shaman (Dixon 1905; Voegelin 1942).

Ethnographic accounts of ownership indicate that at the time of contact, fishing and hunting lands were held in common among Konkow village residents, and the boundaries of these areas were guarded against poachers by different men who switched duties each week. These areas were maintained by controlled burning to keep clear of brush and securely defend the territory in case of war. Some families could, however, secure permission to claim a fishing hole as private within common lands, and this security was passed down patrilineally to the next male in line. Property was owned among men or women who needed it; the *kun* was property of the male who lived in it, and men also owned their hunting and fishing gear. Women owned materials necessary for cooking and housekeeping such as baskets, utensils, and basket-making supplies. Konkow had a custom of burning all possessions of a man at his death, and anything left went to his first eldest son or was shared amongst his children (Dixon 1905).

Subsistence and settlement strategies by the Konkow at the time of contact were noted by ethnographers to be similar to other groups in the region. The Konkow followed a yearly gathering cycle. They journeyed away from their winter river dwellings into the mountains during summer for hunting deer meet to dry, and into the valleys during the spring to collect grass seeds and wild rye. Their summer camps had temporary circular brush enclosures with no roof and a fireplace in the center, each of which housed three to four families and was also used for ceremonies. Many foods gathered for subsistence were used for medicinal, material, and religious purposes as well. Women and children gathered and transported nuts and seeds with baskets. Oak trees provided acorns, which were an important and primary source of nut meats (Dixon 1905; Riddell 1978).

The Konkow exploited aquatic and mammalian food sources in addition to gathering vegetal and insect matter. The first salmon of the season was caught by a shaman and considered a ceremonial occasion; only after each man ate a piece of the shaman's salmon could the seasonal fishing begin. Salmon were dried on a pole whole, pounded into a course powder, and stored in baskets and eaten dry. Fishing was also done by stretching nets across a stream. Animals were either hunted or captured, although Konkow avoided eating bears, coyotes, dog, wolf, or mountain lion. Certain reptiles were also avoided (Dixon 1905; Riddell 1978).

Ethnographers at contact observed that various types of knives, spears, and bows and arrows were manufactured and used for hunting. For blades, obsidian was obtained through trade but silicates were also used, pitched to the end of a spear or arrow and wrapped with sinew. Lithic material was obtained from the Table Mountain Cave, but had to be exchanged for offerings of meat and beads and gathered according to custom as the cave was considered sacred (Dixon 1905; Riddell 1978).

Basketry was both a utilitarian item and a work of art, and basket making was a technical, creative, and spiritual process. The Konkow used redbud, willow, and shoots of hazelnuts with which to twine and weave baskets for burden, cooking, storage, and trade. They often included ancient-style horizontal patterns (Kroeber 1925). Basket-making practices continue among modern Konkow populations today.

Like most Indigenous groups at contact, the Konkow had a holistic epistemology: a theorem of holistic knowledge in which any subject is a composite of all other subjects, and every aspect of knowledge is interconnected. The Konkow world contains many ineffable supernatural beings and spirits, and all natural objects are endowed with potential supernatural powers.

In Konkow mythology, the creation myths were heavily influenced by the *Kuksu* cult. The world was created by the Earth Initiate, and *Kuksu* taught people to cook and hunt, gave them laws, taboos, ceremonies, and rituals. They were made to speak many languages and *Kuksu* sent them to all parts of the world, where they became the ancestors of the different tribes (Gifford and Block 1930). Natural geological processes and weather patterns were explained in reference to various myths and stories, which often dealt with animals as catalyzing agents. Physical charms or small acts such as burning feathers or herbs was believed to influence weather patterns, stop rain, or give protection. Mythical powers and spirits were imbued in every aspect of the environment (mountains, sky, water), and shamans used one or more of these spirits as their power source and protector (Dixon 1905).

Burial rights among the Konkow observed by ethnographers at first contact involved dressing the body in finest clothes and placing it in a flexed position in a bear skin, then burned along with the deceased's material possessions. When a person died away from home, the body was cremated and the ashes carried back and buried at the village. They believe the soil stays among the people at first before traveling to other worlds, so the family cut their hair short and covered their body in a mixture of pine pitch and charcoal. The widow spent all her time in the house weaving baskets to be burned during the annual morning celebration, until which she would refrain from gambling and dancing. A mourning ceremony would take place annually where the deceased's family burned material goods they prepared during the year, for five consecutive years (Dixon 1905).

Contact between the Konkow and western culture was initiated as early as 1808 by Spanish explorers and fur trappers. The effects of the introduction of new diseases notwithstanding, native cultures remained essentially unchanged until after the discovery of gold at Coloma in 1848 (Riddell 1978). An outbreak of malaria in 1833, in concert with the 1848 Gold Rush and subsequent massacre of Native Americans, resulted in an upset of the ecological and social balance of local Native societies. As a direct result, aboriginal populations declined from 8,000 in 1846 to only 900 in 1910 (Riddell 1978).

The U.S. Congress authorized treaties to set aside reservation lands for Native Americans in 1855, and as a result, some Konkow were relocated to the Nome Lackee Reservation in present-day Tehama County (Kowta 1988).

Currently, descendants of the Maidu and Konkow have revitalized their ancestral heritage and have dissociated into the Enterprise, Berry Creek, and Mooretown rancherias in Oroville; the Chico Rancheria in Chico (Mechoopda Indians, a Konkow subgroup); the United Maidu Nation and Susanville Rancheria in Susanville; and the Greenville Rancheria in Plumas County.

4.18.2 Regulatory Setting

4.18.2.1 Assembly Bill (AB) 52

AB 52 is a part of CEQA that requires: 1) a lead agency provide notice to those California Native American tribes that requested notice of Projects proposed by the lead agency; and 2) for any tribe that responded to the notice within 30 days of receipt with a request for consultation, the lead agency must consult with the tribe. Topics that may be addressed during consultation include TCRs, the potential significance of Project impacts, type of environmental document that should be prepared, and possible mitigation measures and Project alternatives.

Pursuant to AB 52, Section 21073 of the PRC defines California Native American tribes as "a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of the Statutes of 2004." This includes both federally and non-federally recognized tribes.

Section 21074(a) of the PRC defines TCRs for the purpose of CEQA as:

1) Sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

    a. included or determined to be eligible for inclusion in the California Register of Historical Resources; and/or

    b. included in a local register of historical resources as defined in subdivision (k) of Section 5020.1; and/or

    c. 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 I of Section 5024.1. In applying the criteria set forth in subdivision (c) of 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.

Because criteria a and b also meet the definition of a Historical Resource under CEQA, a TCR may also require additional consideration as a Historical Resource. TCRs may or may not exhibit archaeological, cultural, or physical indicators.

Recognizing that California tribes are experts in their tribal cultural resources and heritage, AB 52 requires that CEQA lead agencies provide tribes that requested notification an opportunity to consult at the commencement of the CEQA process to identify TCRs. Furthermore, because a significant effect on a TCR is considered a significant impact on the environment under CEQA, consultation is used to develop appropriate avoidance, impact minimization, and mitigation measures.

In accordance with Section 21082.3(c)(1) of the PRC:

> "… information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native American tribe during the

> environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with subdivision (r) of Section 6254 of, and Section 6254.10 of, the Government Code, and subdivision (d) of Section 15120 of Title 14 of the CCR, without the prior consent of the tribe that provided the information."

Therefore, the details of tribal consultation summarized herein are provided in a confidential administrative record and not available for public disclosure without written permission from the tribes.

Summary of AB 52 Tribal Outreach

On November 1, 2022, the County of Sutter notified the following California Native American tribes traditionally and culturally affiliated with the geographic area of the proposed Project, initiating the 30-day response window: Estom Yumeka Maidu Tribe of the Enterprise Rancheria, Ione Band of Miwok Indians, Mechoopda Indian Tribe of Chico Rancheria, Mooretown Rancheria, Nevada City Rancheria Nisenan Tribe, Pakan'yani Maidu of Strawberry Valley Rancheria, Tsi Akim, United Auburn Indian Community, and Wilton Rancheria.

The letter for Grayson Coney with Tsi Akim was returned to sender as not able to be delivered.

On November 30, 2022, Scott Riddle, Senior Civil Engineer with Sutter County, received an emailed response from Anna Starkey with the United Auburn Indian Community, expressing gratitude for the opportunity, and indicated that they reviewed their Tribal Historical Resources Information System and did not identify any previously recorded Tribal Cultural Resources within or adjacent to the Project Area. Ms. Starkey included some language and standard unanticipated mitigation measures to be incorporated into the Tribal Cultural Resources chapter of the environmental document.

There was no request for consultation.

No other responses were received. Therefore, consultation under Assembly Bill (AB) 52 can be considered complete as of December 2, 2022.

4.18.3 Tribal Cultural Resources (XVIII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	☐	☒	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.	☐	☒	☐	☐

Less than Significant with Mitigation Incorporated.

There have been no human remains discovered on the property during past or current cultural resource investigations; however, the potential exists for Project construction to unearth human remains. Implementation of Mitigation Measure TCR-1 would assure that any discovery of human remains within the Project site would be subject to these procedural requirements. Implementation of this mitigation would reduce potential impacts associated with the discovery or disturbance of human remains to less than significant**.**

4.18.4 Mitigation Measures

TCR-1: Unanticipated Discoveries

If subsurface deposits are encountered which represent a Native American or potentially Native American resource that does not include human remains, all work shall cease within 100 feet of the find and the contractor shall immediately contact the County of Sutter and coordinate to contact a member of a culturally affiliated tribe. If the tribal representative determines the find is a TCR, the tribe and the County of Sutter shall consult on appropriate treatment measures. Preservation in place is the preferred

treatment, if feasible. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not a Tribal Cultural Resource or a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) that the treatment measures have been completed to their satisfaction. This Mitigation Measure shall be implemented in conjunction with Mitigation Measure CUL-1.

4.19 Utilities and Service Systems

4.19.1 Environmental Setting

As discussed in Section 2.3.2 *Utilities*, there are multiple utilities lines within the Project limits (see Figure 2-3). An underground Comcast communication line runs along the east side of Larkin Road; this line will not be impacted by the Project. An overhead PG&E electrical line runs along the east side of Larkin Road and on both the north and south sides of Sanders Road, west of Larkin Road. The line also runs on the north side of Sanders Road, east of Larkin Road. Facility maps also identify an underground electrical line running along the east side of Larkin Road following the overhead line. An partially underground AT&T communications line within the Project limits runs along the north side of Sanders Road, and is attached to the side of the existing bridge. The AT&T line will be impacted and require relocation. The AT&T line could be relocated overhead onto the PG&E poles before construction begins to minimize impacts during construction. The overhead PG&E electrical line that runs north along Sanders Road also has the potential to be impacted during construction. Consultation with PG&E prior to construction will determine the feasibility of whether the PG&E line can be left it in service during the construction. Leaving the line in service would require extra caution during several construction activities that would slow the Project timeline. It may also be possible to de-energize this line, which would improve safety during construction, but would still require extra caution and a slowed timeline. This overhead line could be relocated prior to construction, which would avoid all conflicts during construction. However, relocation over the overhead electric line would require additional right-of-way to be purchased for the Project and could delay the start of Project construction.

4.19.1.1 Electricity

Electric service is the Project vicinity is provided by PG&E.

4.19.2 Utilities and Service Systems (XIX) Environmental Checklist and Discussion

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

Less than Significant Impact.

Operation of the proposed Project would not require water, wastewater, electric power, natural gas, or telecommunications service or facilities. Project implementation would not result in a significant increase in impervious surfaces on the site. Stormwater runoff would be routed into the canal, similar to existing conditions. A Stormwater Pollution Prevention Plan will be prepared conducted in compliance with local stormwater quality regulations. Impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☐	☒

No Impact.

No water would be used during Project operation. There would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Result in a determination by the wastewater treatment provider, which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒

No Impact.

See response to a), above. There would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐

Less than Significant Impact.

The Project would generate solid waste during construction. Construction waste would and debris would be recycled or disposed of at Recology Yuba-Sutter, located at 3001 N Levee Rd, Marysville, in compliance

with County and Yuba-Sutter Regional Waste Management Authority regulations. Impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Less than Significant Impact.

The California Integrated Waste Management (CIWM) Act requires every county to adopt an integrated waste management plan that describes county objectives, policies, and programs relative to waste disposal, management, sources reduction, and recycling. The Yuba-Sutter Regional Waste Management Authority reviews and approves all new construction projects required to submit a Construction and Demolition Solid Waste Management Plan that is consistent with the CIWM Act. The disposal of solid waste due to construction activities will comply with all federal, state, and local statues and regulations. Impacts to solid waste statues and regulations will be less than significant.

4.19.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.20 Wildfire

4.20.1 Environmental Setting

Generally, California wildfire season extends from spring to late fall. Fire conditions arise from a combination of hot weather, an accumulation of vegetation, and low moisture content in the air. These conditions, when combined with high winds and years of drought, increase the potential for wildfire to occur. The Department of Forestry and Fire Protection provides wildland fire protection services on private, non-federal lands for the purpose of life, property, and resource protection. U.S. Forest Service and Bureau of Land Management provide wildland fire protection services on federal lands in Federal Responsibility Areas for watershed and resource protection. Some areas are also identified as Local Responsibility Areas.

The Project site and surrounding area are within a Local Responsibility Area and are unzoned for fire hazard severity. Fire protection and emergency services for the Project site are provided by Sutter County CSA-F (Oswald-Tudor Fire Station).

4.20.2 Wildfire (XX) Environmental Checklist and Discussion

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant 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?	☐	☐	☐	☒

No Impact.

The Project site is not classified as a Very High Fire Hazard Severity Zone and is not within or near a State Responsibility Area. There would be no impact.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒

No Impact.

See answer to a), above. There would be no impact.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒

No Impact.

See answer to a), above. There would be no impact.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒

No Impact.

See answer to a), above. There would be no impact.

4.21 Mandatory Findings of Significance

4.21.1 Mandatory Findings of Significance (XXI) Environmental Checklist and Discussion

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐

Less than Significant with Mitigation Incorporated.

As described in Section 4.4 *Biological Resources*, biological resources in the Study Area could be affected by the proposed Project. Mitigation Measures BIO-1 through BIO-5 would be implemented to ensure all potential impacts to special-status species and their habitats are mitigated to less than significant levels. A total of 0.637 acre of potential Waters of the U.S./State has been delineated within the Study Area. Mitigation Measure BIO-6 would be implemented to reduce potential impacts to less than significant.

As described in Section 4.5 *Cultural Resources* and Section 4.18 *Tribal Cultural Resources*, the proposed Project is expected to avoid direct impacts to known cultural and tribal resources. Implementation of Mitigation Measures CUL-1 and TCR-1 would ensure potential impacts to unknown cultural and tribal resources are reduced to less than significant levels. Should any cultural or tribal cultural resources or human remains be encountered during construction, all construction activities would be halted, and a professional archeologist consulted.

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐

Less than Significant with Mitigation Incorporated.

As described above in a) and below in c), all identified potential impacts would be reduced to less than significant with implementation of listed mitigation. All other impacts were found to be less than significant and there are no past, current, or probable future projects that would have a cumulatively significant effect on the environment. Therefore, cumulative impacts would be less than significant with mitigation incorporated.

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Less than Significant with Mitigation Incorporated.

As described in Section 4.3 *Air Quality*, all Project construction equipment would be CARB Tier 4 Certified to reduce potential air quality impacts to less than significant.

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