FRONT SLIDE GATES REPLACEMENT PROJECT

Initial Study/Mitigated Negative Declaration

Prepared for
Western Canal Water District

January 2025

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Acronyms and Other Abbreviations

Acronym or Abbreviation	Definition
afy	acre feet per year
Basin Plan	State Water Resources Control Board's Water Quality Control Plan
BMP	best management practice
C-APE	CEQA Area of Potential Effects
CAAQS	California ambient air quality standards
CAL FIRE	California Department of Forestry and Fire Protection
CARB	California Air Resources Board
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CHRIS	California Historical Resources Information System
CNDDB	California Natural Diversity Database
CO	carbon monoxide
Cortese List	California Department of Toxic Substances Control's Hazardous Waste and Substances Site List
CVP	Central Valley Project
dB	decibel
dBA	A-weighted decibel
DOC	California Department of Conservation
DPM	diesel particulate matter
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
FE	listed as endangered under the Federal Endangered Species Act
FRAQMD	Feather River Air Quality Management District
FT	listed as threatened under the Federal Endangered Species Act
HRA	health risk assessment
in/sec	inches per second
IPaC	Information for Planning and Consultation
MBTA	Migratory Bird Treaty Act
MND	Mitigated Negative Declaration
NAHC	California Native American Heritage Commission
NEIC	Northeast Information Center

Acronym or Abbreviation	Definition
NEPA	National Environmental Policy Act
NO_2	nitrogen dioxide
NO_x	oxides of nitrogen
NRCS	Natural Resources Conservation Service
NSVPA	Northern Sacramento Valley Planning Area
OEHHA	Office of Environmental Health Hazard Assessment
PPV	peak particle velocity
Proposed Project	Front Slides Gates Replacement Project
RD	Reclamation District
RMS	root mean square
ROG	reactive organic gases
SE	listed as endangered under the California Endangered Species Act
SGMA	Sustainable Groundwater Management Act
SLF	Sacred Lands File
SO_2	sulfur dioxide
SSC	CDFW Species of Special Concern
ST	listed as threatened under the California Endangered Species Act
SVAB	Sacramento Valley Air Basin
SVP	Society of Vertebrate Paleontology
SWPPP	storm water pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TMDL	Total Maximum Daily Load
USFWS	U.S. Fish and Wildlife Service
VdB	vibration decibels
VMT	vehicle miles traveled
WCWD	Western Canal Water District
WEAP	Worker Environmental Awareness Protections Training

CHAPTER 1
Introduction

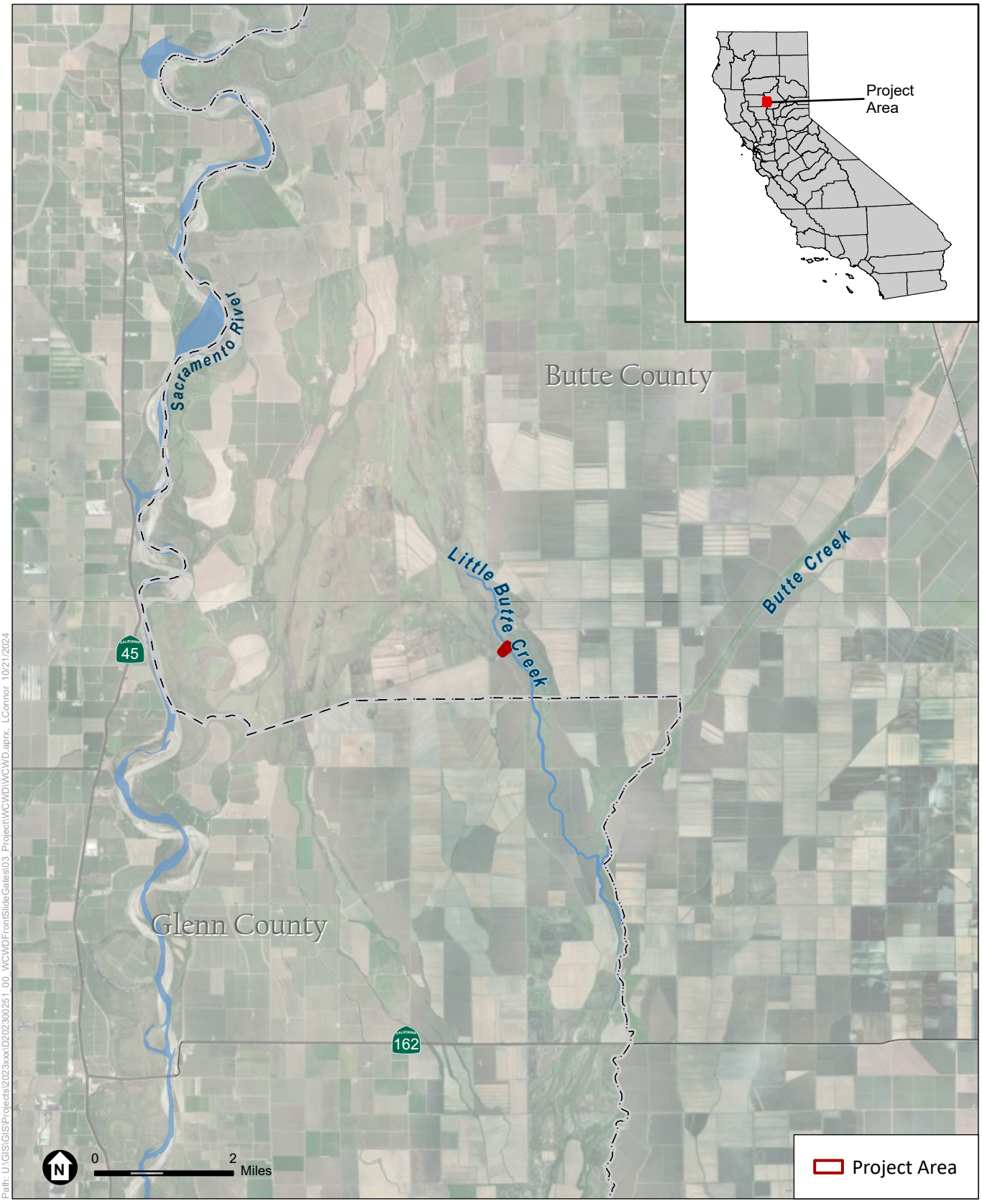
As lead agency under the California Environmental Quality Act (CEQA), Western Canal Water District (WCWD or District) has prepared this Initial Study to address the environmental consequences of the proposed Front Slide Gates Replacement Project (Proposed Project). The Initial Study was released for public from December 11, 2024 through January 10, 2025. Revisions have been made to this Final Initial Study based on comments received and are shown by ~~strikethrough~~ for deletions and double underline for additions.

The WCWD manages water levels for irrigation diversion and provides water supply to approximately 67,500 acres of land within the Butte Subbasin, including agricultural lands, wildlife areas, and aquatic habitat. The primary purpose of the Proposed Project is to replace the aging Front Slide Gates (FSG) structure across Little Butte Creek, to improve operational flexibility and water supply reliability and efficiency within the WCWD's extensive service area. The Proposed Project will support WCWD's modernization objectives of enhanced operational control to provide flexibility in water delivery, manage spillage, and improve measurement, monitoring and water accounting. As shown on **Figure 1-1**, the existing FSG structure spans Little Butte Creek just north of Nelson Road, on the western side of Butte County, approximately 13 miles southwest of Chico, California.

1.1 Document Organization

This document is organized into the following chapters:

- **Chapter 1, *Introduction,*** describes the organization of this document and the purpose of the Initial Study, and presents a summary of resources not considered in detail.
- **Chapter 2, *Project Description,*** describes the proposed project, including the proposed project location, proposed project objectives, activities to be conducted under the proposed project, and permits and/or approvals that may be required before implementation of the proposed project.
- **Chapter 3, *Initial Study Environmental Checklist,*** presents an analysis of potential impacts of the proposed project for the resource topics included in the CEQA Environmental Checklist (Appendix G of the State CEQA Guidelines). For each resource topic question, the following information is provided: (1) environmental setting; (2) a discussion of the potential effects of implementing the proposed project; (3) a significance finding; and (4) any mitigation measures recommended for incorporation into the proposed project to reduce identified significant impacts to a less-than-significant level. This chapter lists the references used in preparation of this Initial Study for each resource topic.



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SOURCE: Esri, 2021; ESA, 2023

WCWD Front Slide Gates Replacement

Figure 1-1
Regional Vicinity

Prepared by: ESA

1.2 Purpose of the Initial Study

This Initial Study was prepared in accordance with Public Resources Code Section 21000 et seq. (CEQA) and Title 14, Section 15000 et seq. of the California Code of Regulations (the State CEQA Guidelines). The purpose of this Initial Study is to: (1) determine whether implementing the Proposed Project would result in potentially significant or significant effects on the environment; and (2) incorporate mitigation measures into the Proposed Project's design, as necessary, to eliminate the project's potentially significant or significant effects or reduce them to a less-than-significant level.

After completion of the required 30-day public comment period, and before approving the Proposed Project, the WCWD will consider the Mitigated Negative Declaration (MND) together with any comments provided during the public comment period. The WCWD will adopt the MND if, based on the whole of the record, (1) there is no substantial evidence that the proposed project will have a significant effect on the environment; and (2) it represents the WCWD's independent judgment and analysis.

As part of the approval process, the WCWD will also prepare and adopt a mitigation monitoring and reporting program for mitigation measures identified in the MND, as required under Public Resources Code Section 21081.6(c).

1.3 Resources Not Considered in Detail

The following resource topics were not considered in detail because no impact would occur under any of these categories.

1.3.1 Agriculture and Forestry Resources

The Proposed Project would be constructed and operated along the existing channel alignment, with a slightly larger footprint, and would not be located on any existing agricultural fields, farmlands, or forest lands. Any construction impacts outside the channel would be temporary, as the pre-construction conditions would be restored upon completion of the project. The staging area would be on the top of bank on the northeast side of the channel and would not infringe upon the adjacent agricultural lands. One of the main objectives of the Proposed Project is to modernize and enhance reliable water supply to the WCWD service area, including irrigation customers. Therefore, construction and operation of the Proposed Project would not directly or indirectly result in the conversion of farmland or forest land to other uses and would not conflict with a Williamson Act contract. Therefore, no impacts related to agriculture and forestry resources would occur and this resource area is not discussed further.

1.3.2 Land Use and Planning

The Proposed Project would be constructed and operated along the existing channel alignment, with a slightly larger footprint, which is zoned for agricultural uses. The Proposed Project is not located in a city, community, or residential area and would therefore not result in disruption, physical division, or isolation of an existing community or existing residential or open space

areas. Any construction impacts outside the channel would be temporary, as the pre-construction conditions would be restored upon completion of the project and operation of the Proposed Project would be consistent with existing conditions, therefore the WCWD infrastructure at the site would continue to be consistent with existing land uses, plans, policies, and regulations. Therefore, no impacts related to land use and planning would occur and this resource area is not discussed further.

1.3.3 Mineral Resources

The Proposed Project is not located in an area identified as containing mineral resources classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the state. The Proposed Project is also not located on a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. The Proposed Project would be constructed and operated along the existing channel alignment, with a slightly larger footprint, and would therefore not result in the loss of availability of or loss of access to a known mineral resource. No impacts on mineral resources would occur and this resource area is not discussed further.

1.3.4 Population and Housing

Construction of the Proposed Project would be short-term and would not require additional workers outside of the existing local workforce. The Proposed Project site is located along the existing alignment, which is zoned agricultural and is not located in a city, community, or residential area where housing or people would be displaced; therefore the Proposed Project would not necessitate the construction of replacement housing. The Proposed Project would improve water reliability and efficiency to WCWD's service area by installing a concrete foundation, catwalk, and several mechanically operated gates to regulate upstream reservoir water levels and downstream flowrates; however, the infrastructure improvements would not meaningfully increase WCWD's service capacity and would therefore not induce unplanned population growth in the service area, particularly given that WCWD mainly serves agricultural and wildlife areas. Therefore, no impacts related to population and housing would occur and this resource area is not discussed further.

1.3.5 Public Services

The Proposed Project would improve existing infrastructure to enhance water reliability and efficiency by installing a concrete foundation, catwalk, and several mechanically operated gates to regulate upstream reservoir water levels and downstream flowrates. The Proposed Project would not result in the construction of any new facilities or housing or otherwise result in an increased population that would generate a need for new or physically altered government facilities. Therefore, demand for police and fire protection and for community amenities such as schools and parks would not change relative to existing conditions. No impacts would occur and this resource area is not discussed further.

1.3.6 Recreation

As described under Sections 1.3.4 and 1.3.5, the Proposed Project would not result in an increased local population that would increase demand on local recreation facilities, nor would it cause construction or operational activities to occur on local recreation facilities or otherwise increase use on other nearby recreational facilities such that substantial physical deterioration would occur. The Project proposes to improve water reliability and efficiency by installing a concrete foundation, catwalk, and several mechanically operated gates within the existing channel alignment; it does not propose the construction or expansion of recreational facilities. Therefore, no impacts on recreation would occur and this resource area is not discussed further.

1.3.7 Utilities and Service Systems

The Proposed Project would improve water reliability and efficiency by installing a concrete foundation, catwalk, and several mechanically operated gates to regulate upstream reservoir water level and downstream flowrate. The Proposed Project would not produce wastewater or exceed wastewater treatment requirements of the Central Valley Water Quality Control Board. As described under Sections 1.3.4 and 1.3.5, the Proposed Project would not result in an increased local population or otherwise increase the demand for wastewater treatment. The Proposed Project would not result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, nor would it require or result in the construction of additional off-site storm water drainage facilities. No new or expanded water supplies or entitlements are needed or required as a result of the Proposed Project. Construction and operation of the Proposed Project would not generate significant amounts of solid wastes and no impacts are anticipated as relating to landfill capacity. The Proposed Project will comply with all relevant federal, state, and local statutes and regulations related to solid waste. No impacts would occur and this resource area is not discussed further.

1.3.8 Wildfire

The Proposed Project would be constructed and operated along the existing channel alignment, with a slightly larger footprint, and the equipment would be staged on the top of bank on the northeast side of the channel, on either side of Nelson Road, which would be closed only briefly to install the temporary bypass pipelines. As such, the Proposed Project would not impair an adopted emergency response plan or emergency evacuation plan. The Proposed Project would not require the installation or maintenance of infrastructure that may exacerbate fire risks or that may result in temporary or ongoing impacts to the environment. The Proposed Project is located in an area with flat terrain that would not 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. Therefore, no impacts would occur and this resource area is not discussed further.

1.4 Responsible Agencies, Permits, and Approvals

Table 1-1 summarizes the potential permits and/or approvals that may be required prior to construction of the Proposed Project.

TABLE 1-1
REGULATORY REQUIREMENTS, PERMITS, AND AUTHORIZATIONS FOR PROJECT FACILITIES

Agency	Type of Approval
Federal Agencies	
United States Army Corps of Engineers	Clean Water Act Section 404 Nationwide Permit; Section 408 Permission; National Historic Preservation Act Section 106 Consultation
United States Fish and Wildlife Service/ National Marine Fisheries Service	Federal Endangered Species Act Section 7 Consultation
State Agencies	
California Department of Fish and Game	Section 1600 Streambed Alteration Agreement and Incidental Take Permit
Central Valley Regional Water Quality Control Board	Clean Water Act Section 401 Water Quality Certification; NPDES General Permit for Stormwater Discharge Associated with Construction
Central Valley Flood Protection Board	Minor Alteration Request
Local Agencies	
Butte County	Encroachment Permit

CHAPTER 2
Project Description

2.1 Introduction

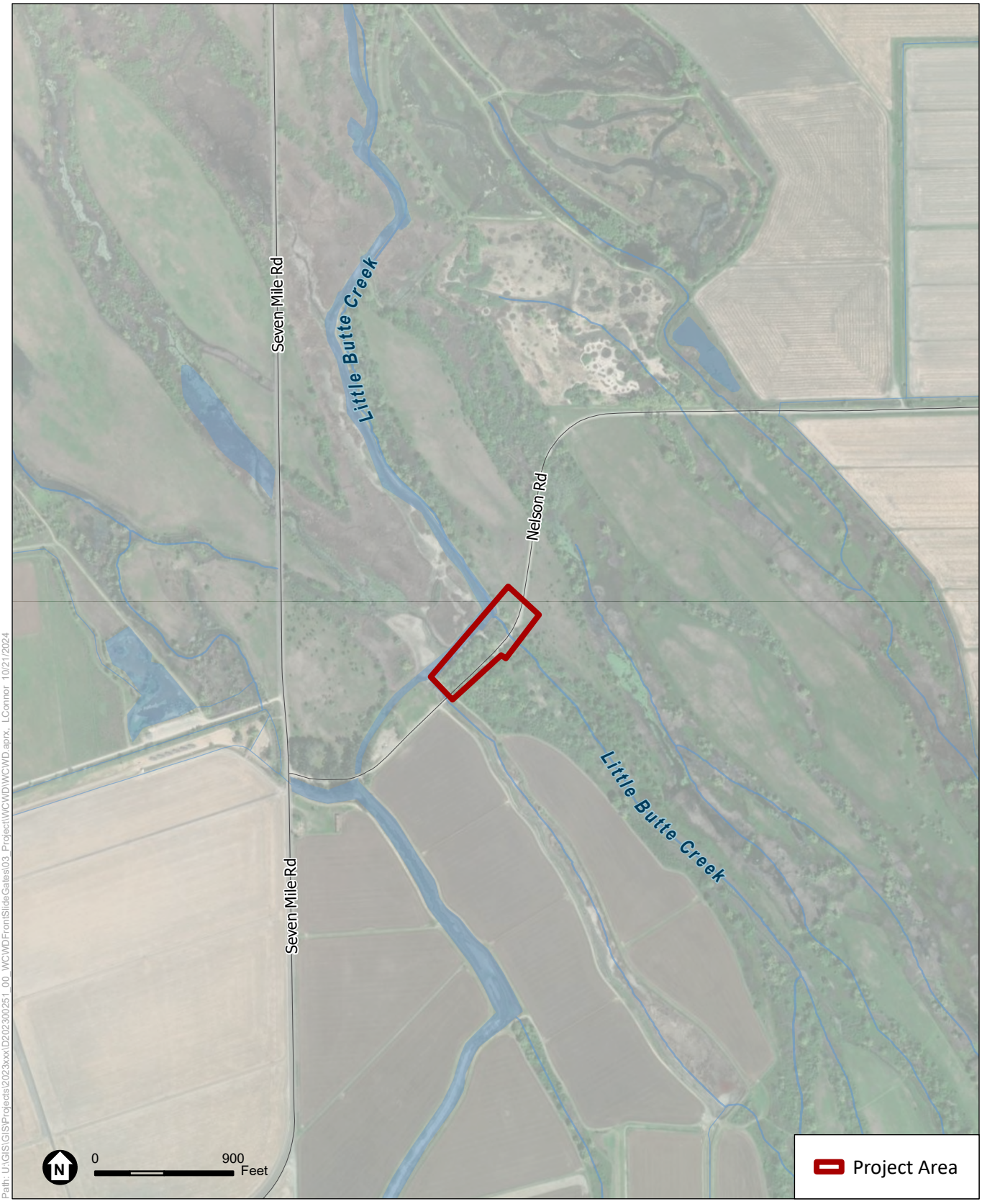
The following discussion summarizes the background of the Front Slide Gates Replacement Project (Proposed Project) and provides relevant construction information for the Proposed Project.

2.2 Background

Western Canal Water District (WCWD or District) was established in 1984 as a California Water District and currently encompasses a land area of approximately 67,500 acres, of which approximately 59,000 acres are irrigable in the Butte Subbasin. Water supply is based on pre-1914 surface water rights and the 1969 Feather River diversion agreement with the State of California. WCWD is comprised primarily of agricultural lands, 90 percent of which are farmed in rice. WCWD has 258 canal turnouts supplying water to 150 customers for agricultural irrigation, the California Department of Fish and Wildlife (CDFW) Upper Butte Basin Wildlife Area, private and public wetlands, rice straw decomposition operations, and other agricultural uses within its boundaries. WCWD's average irrigation season (April-October) diversions total approximately 216,000 acre-feet (AF) with an average of 60,000 AF diverted for winter flooding and rice straw decomposition (2020 Feather River Regional Agricultural Water Management Plan).

WCWD's main water supply is comprised of 150,000 AF of natural flow from the Feather River and 145,000 AF of previously stored water in the Feather River North Fork Project. Additionally, WCWD maintains a water right on Butte Creek for up to 11,400 AF, which can only be diverted during a certain period of the year. During drought years, WCWD's main water supply is subject to a reduction of up to 50%. To offset the reduction of surface water available, water users within WCWD's service area rely on agricultural production wells and groundwater supplies to supplement WCWD's allocation to primary lands. Groundwater use by individual water users within WCWD's boundaries depends on several factors, including weather and commodity prices.

The existing Front Slide Gates (FSG) structure spans Little Butte Creek just north of Nelson Road and impounds Creek flows (when present) that are comingled with upstream inflows from the Thermalito Afterbay via the Western Main Canal (**Figure 2-1**). During the irrigation season, inflows are exclusively comprised of upgradient drain flows and intentional deliveries via the Western Main Canal. The impounded water body created by the operation of the FSG facilitates WCWD's diversions to the Western Main Canal and the Ward Canal (west of Little Butte Creek) that provide critical irrigation supply to approximately one third of WCWD's service area (~20,000 acres) which would otherwise be reliant on groundwater.



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SOURCE: TIGER, 2020; ESA, 2023

WCWD Front Slide Gates Replacement

Figure 2-1
Project Vicinity

Prepared by: ESA

The fields served by the FSG are optimally located within the Pacific Flyway and are an invaluable refuge for waterfowl and shorebirds during the winter months. The regulation of flows and water levels performed by the FSG not only manages upstream water levels for irrigation diversion, but also provides essential water supply to CDFW's Upper Butte Basin Wildlife Area (Howard Slough and Llano Seco Units) and creates aquatic and upland habitat, particularly during the otherwise dry summer months.

The existing structure is 150 feet long, consisting of 25 manually operated 67-inch-wide slide gates, oriented side-by-side across the channel. Four of the gates are operated via gear drive and handwheel and the remainder are raised/lowered seasonally using a cable attached to a mobile winch that is moved from gate to gate to individually raise/lower the gates. The gate assemblies comprising the FSG are fully raised in early February each year to minimize restriction of storm flows originating from upgradient drainages. The original construction date of the FSG is unknown but is likely more than 50 years old.

The FSG is critical to WCWD's ability to provide reliable and efficient water delivery; however, this is made difficult due to the topographically flat nature of the upstream channel and resulting delay in surface water level increases during changing upstream flows, the lack of accurate or flexible flow control mechanisms, and the lack of flow measurement devices. The existing FSG has limited operational flexibility, is labor intensive to operate and maintain, and has reached the end of its useful life, as evidenced by a subgrade breach failure in 2017 which required emergency repair. Additionally, freeboard near the site is less than one foot at normal operating water levels, which increases the risk of overtopping. Combined, these issues make the site a limitation to achieving the WCWD's modernization objectives of enhanced operational control to provide flexibility in water delivery, manage spillage, and improve measurement, monitoring, and water accounting.

2.3 Proposed Project

The Proposed Project includes a new structure in the channel along the same approximate alignment as the existing structure, but with a larger footprint to accommodate the necessary civil works. The new structure would contain a concrete foundation, catwalk, and several mechanically operated gates to regulate upstream water levels and downstream flowrates.

2.3.1 Project Objectives

The FSG is critical to the District's ability to provide reliable and efficient water delivery. However, this is made difficult by the topographically flat nature of the upstream channel and resulting delay in surface water level increases during changing upstream flows, the lack of accurate or flexible flow control mechanisms, lack of flow measurement devices, and the significant labor and time to implement the limited control mechanisms available. Safety risks to the District's operational staff during seasonal adjustments, and potential catastrophic failure of the structure due to its aged condition are also concerns. Additionally, the site does not support the District's district-wide modernization objectives of enhanced operational control to provide flexibility in water delivery, manage spillage, and improve measurement, monitoring, and water

accounting. Therefore, the planning, design, and engineering of a replacement structure is guided by the following Proposed Project improvement objectives:

- Preserve and enhance the level of water delivery service to irrigation customers, Upper Butte Basin Wildlife area, and habitat areas supported by the FSG. Eliminate structural deficiencies and prolong the function and performance of the site.
- Improve water use efficiency by reducing operational spillage.
- Improve operational safety and reduce the seasonal operation and maintenance effort.
- Enhance the operational flexibility to reliably meet water control criteria during the irrigation season, winter water delivery, and winter flood events.

2.3.2 Project Construction Methodology

Mobilization, Construction Access, and Staging

Access from nearby cities can be accomplished via Seven Mile Lane, Nelson Road via Aquas Frias Road, or Nelson Road via Midway Road. Informal consultation with the Butte County Public Works Department[1] did not readily identify any load-restricted bridges on the County roads likely used for access. On-site access roads consist of compacted native soils and may be impassable in wet conditions. The equipment would be staged to the northeast of the FSG structure on either side of Nelson Road, as identified on **Figure 2-2**.

Water Control

Construction of the Proposed Project would be accomplished during the active irrigation season and water deliveries to the neighboring lands must be maintained. Thus, construction of the Proposed Project will require isolation of the site and control of water to create suitable working conditions. Water control activities would generally include:

- Installation of an approximately 200-foot-long linear cofferdam upstream of the proposed FSG structure. The cofferdam would be temporary and may be constructed of steel sheet pile or other methods. Steel sheet piles could be driven up to 10 feet below, and extend up to 10 feet above, the channel bed.
- Construction of an approximately 350-foot-long temporary conveyance pipeline that bypasses the construction site and provides continued water delivery service to Little Butte Creek downstream of the construction site. The conveyance would be comprised of open channel sections and buried pipeline sections.
- Temporary on-site pumping of accumulated water from seepage or shallow groundwater. Pumping may require shallow sumps to be temporarily constructed with the construction site.
- Other minor works as may be required, within the same footprint described above.

[1] Personal comms. T. Ostrowski (Davids Engineering, Inc.) and Raymond Cooper, Butte County Public Works Engineering and Capital Projects, rcooper@buttecounty.net.

SOURCE: Maxar, 2023; Davids Engineering, 2023; ESA 2024

WCWD Front Slide Gates Replacement/Site

Figure 2-2
Proposed Project Components

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Clearing and Grubbing

Construction of the Proposed Project would require clearing and grubbing of the site within the boundaries shown on Figure 2-2. Clearing and grubbing activities generally include:

- Stripping of existing surface (~6-12" depth) vegetation
- Removal of trees and woody debris

Existing Structure Demolition and Removal and Construction of New Structure

The Proposed Project would include demolition and removal of the existing structure and replacement with a new, similar structure oriented along the same approximate alignment, but with a larger footprint to accommodate the necessary civil works (Figure 2-2). The Proposed Project would include the following features:

- Excavation for and demolition of the existing concrete and steel structure, and removal and disposal or stockpiling of existing concrete rubble and riprap.
- Structural concrete (cast-in-place) structure approximately 176 feet long containing concrete slab foundation along its entire width, with vertical cutoff walls extending up to 10 feet below existing channel invert and wingwalls extending upstream and downstream on either side of the structure; and concrete ramps on either side of the channel to enable vehicular access from either bank to the channel floor.
- 10 mechanical water level control gates installed within the concrete structure.
- Catwalk across 150 feet of the 176-foot-long structure.
- Electrical and equipment building (up to 100 square-feet).
- Placement and compaction of earth fill to raise and widen existing embankment roads upstream and downstream of the structure.
- Construction of up to 150 feet of new underground or overhead electrical service from a nearby PG&E power pole to the site. This extension would run within the west embankment road to an electrical and equipment building associated with the FSG.
- Placement of 300 cy of rock riprap immediately upstream of the new FSG structure to reduce the potential for wind-wave erosion.
- Placement of 1,000 cy of rock riprap (or similar slope stabilization measure) within the channel and side slopes immediately downstream of the new FSG structure to reduce the potential for erosion along the creek.

Construction Equipment

Construction activities for the Proposed Project would use the following equipment:

- Excavators
- Road grader/blade
- Backhoes
- Sheepsfoot compactors
- Smooth drum rollers
- Dump trucks
- Bulldozers
- Ready-mix concrete transit trucks
- Concrete pumping equipment (boom and line pumps)
- Cranes

- Water trucks
- Loaders
- Generators
- Miscellaneous hand and power tools

2.3.3 Project Construction Schedule

Construction activities would take place Monday through Friday during daylight hours and over a six-month time period, generally between May and October 2026. A cofferdam would be constructed upstream of the structure before the start of the irrigation season when the natural flow in Little Butte Creek is at a minimum, or after the start of the irrigation season using a land-based crane. Construction of the structure would commence shortly after cofferdam installation.

2.3.4 Project Operations and Maintenance

Once constructed, WCWD will be responsible for operating and maintaining the structure. During the water delivery season, the structure will operate automatically and therefore operators are not required unless an unexpected issue arises. During the winter, when water is not being delivered to service area customers, the gates will be completely lowered to allow flood flows to pass through the structure and down Little Butte Creek. The mechanical gates are expected to require minimal maintenance other than clearing debris from the structure and typical preventative maintenance, which already occurs under existing conditions.

Operation and maintenance activities associated with the Proposed Project would not alter the existing land use of the area or establish a new land use that could introduce new sounds, odors, visual characteristics, hazardous materials, or other physical impacts that differ from existing conditions. Operational and maintenance activities would be the same or less frequent/lower intensity than existing activities, because the new FSG structure would be more efficient and automated. Therefore no impacts would occur related to Proposed Project operation and maintenance, and these activities are not evaluated further in Chapter 3.

CHAPTER 3
Initial Study Environmental Checklist

1. **Project Title:** Front Slide Gates Replacement Project
2. **Lead Agency Name and Address:** Western Canal Water District
   2003 Nelson Rd, Nelson, CA 95958
3. **Contact Person and Phone Number:** Ted Trimble, General Manager
   (530) 342-5083
4. **Project Location:** Butte County
5. **Project Sponsor's Name and Address:** Same as above
6. **General Plan Designation(s):** AG-160 Agriculture (160 acre minimum)
7. **Zoning:** Agriculture
8. **Description of Project:** See Project Description
9. **Surrounding Land Uses and Setting:** See Project Description
10. **Other public agencies whose approval is required:** See Table 1-1
11. **Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?** No

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

3.1 Environmental Factors Potentially Affected

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

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

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial study:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed 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 proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed 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 proposed 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 proposed project, nothing further is required.

Signature _____ Date _____

Signature _____ Date _____

3.2 Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:	Significant or Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less than Significant	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

3.2.1 Environmental Setting

Aesthetic or visual resources include the "scenic character" of a particular region and site. Scenic features can be either natural (e.g., vegetation and topography) or man-made (e.g., historic structures). Areas that are more sensitive to potential visual effects are usually readily observable by sensitive receptors (such as recreationists or motorists), such as land found adjacent to major roadways and hilltops.

Visual Environment

The Proposed Project site is located in unincorporated Butte County. The area is generally flat and used primarily for agriculture. There are no officially designated scenic highways in Butte County (Caltrans 2023). The FSG structure itself spans Little Butte Creek, and the Proposed Project site is adjacent to non-irrigated agricultural fields to the north and east and Nelson Road immediately to the south. Additional non-irrigated agricultural fields and riparian brush areas are to the south and west of Nelson Road. The land between the FSG and Nelson Road is comprised of forested and emergent wetland.

3.2.2 Discussion

a) **No Impact.** The Proposed Project is not located in or near any designated scenic vistas and therefore would not have a substantial impact on a scenic vista. Specifically, the Proposed Project would be located along the same approximate channel alignment with a slightly larger footprint where there are no designated scenic vistas nearby. The construction activities of the Proposed Project would not interfere with views of any scenic vistas or scenic resources. As a result, no impact on a scenic vista would occur.

b) **No Impact.** The Proposed Project is not located near or within a designated state scenic highway and therefore would not damage scenic resources, including but not limited to

trees, outcroppings, and historic buildings within a state scenic highway. Specifically, the Proposed Project would be located along the same approximate channel alignment with a slightly larger footprint and is not located near or within a designated state scenic highway. The Proposed Project's construction activities would not be located within any area that has been designated as a scenic vista or scenic resource. Therefore, no impact on scenic resources would occur.

c) **Less than Significant.** Construction of the Proposed Project's facilities would be visible and could involve temporary negative aesthetic effects, including the presence of construction equipment and materials. However, any construction impacts would be temporary as the pre-construction conditions would be restored upon completion of the project and there are no sensitive receptors within the Proposed Project area or surrounding vicinity. The Proposed Project would result in the removal of some trees, vegetation and woody debris; however, the forested and emergent wetland would largely remain intact and vegetation removal would not substantially degrade the existing visual character or quality of the site and/or its surroundings and would not have any significant visual impacts. Therefore, the impact would be less than significant.

d) **No Impact.** The Proposed Project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. The Proposed Project would not be constructed during nighttime hours and once constructed there would be no lights or other sources of light, glare, or reflective surfaces over existing conditions. Therefore, no impacts would occur.

3.2.3 References

California Department of Transportation (Caltrans). 2023. *California State Scenic Highway System Map.* Available: http://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa. Accessed July 26, 2023.

3.3 Air Quality

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

3.3.1 Environmental Setting

General Climate and Meteorology

The Proposed Project site is located in unincorporated Butte County within the Sacramento Valley Air Basin (SVAB). The SVAB is bounded on the west by the Coast Range, on the north by the Cascade Range, on the east by the Sierra Nevada, and on the south by the San Joaquin Valley Air Basin. The intervening terrain is flat, and approximately 25 feet above sea level. The SVAB consists of the counties of Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, Yolo, and Yuba and portions of Placer and Solano Counties. Butte County is in the Northern Sacramento Valley Air Basin (NSVAB) of the SVAB. The NSVAB is composed of Butte, Colusa, Glenn, Shasta, Sutter, Tehama, and Yuba Counties.

The Sacramento Valley and Butte County have a Mediterranean climate, characterized by hot, dry summers and cool, wet winters. Winter weather is governed by cyclonic storms from the North Pacific, and summer weather is typically subject to a high-pressure cell that deflects storms from the region. In Butte County, winters are generally mild, with daytime average temperatures in the low 50s and nighttime temperatures in the upper 30s. Temperatures range from an average January low of approximately 36°F to an average July high of approximately 96°F, although periodic lower and higher temperatures are common. Rainfall between October and May averages about 26 inches but varies considerably year to year. Heavy snowfall often occurs in the northeastern, mountainous portion of the county. Periodic rainstorms contrast with occasional stagnant weather and thick ground or “tule” fog in the moister, flatter parts of the valley. Winter winds generally come from the south, although north winds also occur.

Criteria Air Pollutants

Concentrations of criteria air pollutants are used as indicators of ambient air quality conditions. Source types, health effects, and future trends associated with each air pollutant are described

below along with the most current attainment area designations and monitoring data for the Proposed Project site and vicinity.

Ozone

Short-term exposure to ozone can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, ozone can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema. Ozone is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and oxides of nitrogen (NO_X). ROG and NO_X are known as precursor compounds for ozone.

Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately three hours. Ozone is considered both a secondary and regional air pollutant because it is not emitted directly by sources, but is formed downwind of sources of ROG and NO_X under the influence of wind and sunlight. Ozone concentrations tend to be higher in the late spring, summer, and fall, when the long sunny days combine with regional subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds, like ozone.

Carbon Monoxide

Ambient carbon monoxide (CO) concentrations normally are considered a local effect and typically correspond closely to the spatial and temporal distributions of vehicular traffic. Wind speed and atmospheric mixing also influence CO concentrations. Under inversion conditions, CO concentrations may be distributed more uniformly over an area that may extend some distance from vehicular sources. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the blood's oxygen-carrying capacity. This reduces the amount of oxygen that can reach the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, and for fetuses.

CO concentrations have declined dramatically in California as a result of existing controls and programs. Most areas of the state, including the region surrounding the proposed Project site, have no problem meeting the state and federal standards for CO. Measurements and modeling for CO were important in the early 1980s when CO levels were regularly exceeded throughout California. In more recent years, CO measurements and modeling results have not been a priority in most California air districts, given the retirement of older polluting vehicles, lower emissions from new vehicles, and improvements in fuels.

Nitrogen Dioxide

Nitrogen dioxide (NO_2) is a reddish brown gas that is a byproduct of combustion processes. NO_2 may be visible as a coloring component of a brown cloud on high-pollution days, especially in conjunction with high ozone levels.

Vehicle internal combustion engines and industrial operations are the main sources of NO_2, which is an air quality concern because it acts a respiratory irritant and is a precursor of ozone. NO_2 is a major component of the group of gaseous nitrogen compounds commonly referred to as NO_X,

which are produced by fuel combustion in motor vehicles, industrial stationary sources, ships, aircraft, and rail transit. Typically, NO_X emitted from fuel combustion are in the form of nitric oxide and NO_2. Nitric oxide is often converted to NO_2 when it reacts with ozone or undergoes photochemical reactions in the atmosphere. Therefore, NO_2 emissions from combustion sources are typically evaluated based on the amount of NO_X emitted from the source.

Sulfur Dioxide

Sulfur dioxide (SO_2) is a combustion product of sulfur or sulfur-containing fuels such as coal and diesel. SO_2 is also a precursor to the formation of atmospheric sulfate and particulate matter and contributes to the potential atmospheric formation of sulfuric acid that could precipitate downwind as acid rain. The concentration of SO_2, rather than the duration of exposure, is an important determinant of respiratory effects. Exposure to high SO_2 concentrations may result in edema of the lungs or the glottis and respiratory paralysis.

Particulate Matter

PM_{10} and $PM_{2.5}$ are particulate matter measuring 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. (A micron is one-millionth of a meter.) PM_{10} and $PM_{2.5}$ represent fractions of particulate matter that can be inhaled into the air passages and the lungs and can cause adverse health effects. Some sources of particulate matter, such as wood burning in fireplaces, demolition, and construction activities, are more local, while others, such as vehicular traffic, have a more regional effect. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. Particulates also can damage materials and reduce visibility.

Large dust particles (those with a diameter greater than 10 microns) settle out rapidly and are easily filtered by the human breathing passages. This large dust is of more concern as a soiling nuisance than as a health hazard. The remaining fraction, PM_{10} and $PM_{2.5}$, are a health concern, particularly when present at levels exceeding the federal and state ambient air quality standards. $PM_{2.5}$ (including diesel exhaust particles) is thought to have greater effects on health, because these particles are so small and thus can penetrate to the deepest parts of the lungs. Scientific studies have suggested links between fine particulate matter and numerous health problems including asthma, bronchitis, and acute and chronic respiratory symptoms such as shortness of breath and painful breathing. Diesel particulate is carcinogenic and considered a toxic as discussed below. Recent studies have shown an association between morbidity (suffering from a disease or medical condition) and mortality (premature deaths) and daily concentrations of particulate matter in the air. Children are more susceptible to the health risks of PM_{10} and $PM_{2.5}$ because their immune and respiratory systems are still developing.

Mortality studies conducted since the 1990s have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. Despite important gaps in scientific knowledge and continued reasons for some skepticism, a comprehensive evaluation of the research findings provides persuasive evidence that exposure to fine particulate air pollution has adverse effects on cardiopulmonary health (Pope and Dockery 2006). The California Air Resources Board (CARB) has estimated that achieving the ambient air quality standards for PM_{10} could reduce premature mortality rates by 6,500 cases per year (CARB 2002).

Lead

Ambient lead concentrations meet both the federal and state standards in the proposed Project area. Lead has a range of adverse neurotoxin health effects, and was formerly released into the atmosphere primarily via leaded gasoline products. The phase-out of leaded gasoline in California caused atmospheric lead levels to decrease.

The Proposed Project would not introduce any new sources of lead emissions; consequently, quantification of lead emissions is not required, and such emissions are not evaluated further in this analysis.

Toxic Air Contaminants

Non-criteria air pollutants, or toxic air contaminants (TACs), are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer-causing) adverse effects on human health. TACs include both organic and inorganic chemical substances. They may be emitted by a variety of common sources including gasoline stations, automobiles, diesel engines, dry cleaners, industrial operations, and painting operations. TACs are regulated differently than criteria air pollutants at both the federal and state levels. At the federal level, these airborne substances are referred to as hazardous air pollutants. The state list of TACs identifies 243 substances and the federal list of hazardous air pollutants identifies 189 substances.

CARB identified diesel particulate matter (DPM) as a TAC in 1998, based primarily on evidence demonstrating cancer effects in humans. Exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Mobile sources such as trucks and buses are among the primary sources of diesel emissions, and DPM concentrations are higher near heavily traveled highways and rail lines with diesel locomotive operations. The risk from DPM, as determined by CARB, declined from 750 in 1 million in 1990 to 570 in 1 million in 1995; by 2000, CARB estimated the average statewide cancer risk from DPM to be 540 in 1 million (CARB 2009). These calculated cancer risk values from ambient air exposure can be compared against the lifetime probability of being diagnosed with cancer in the United States, from all causes, which is more than 40 percent (based on a sampling of 17 regions nationwide), or greater than 400,000 in 1 million, according to the National Cancer Institute (NCI 2012).

Odorous Emissions

Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The ability to detect odors varies considerably among the population and is quite subjective. People may have different reactions to the same odor. An odor that is offensive to one person may be perfectly acceptable to another (e.g., coffee roaster). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. In a phenomenon known as odor fatigue, a person can become desensitized to almost any odor and recognition occurs only with an alteration in the intensity.

The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors. Odor impacts should be considered for any proposed new odor sources located near existing receptors, and for any new sensitive receptors located near existing odor sources. Generally, increasing the distance between the receptor and the odor source will mitigate odor impacts.

Sensitive Receptors

Some receptors are considered more sensitive than others to air pollutants. The reasons for this greater sensitivity include preexisting health problems, proximity to an emissions source, or duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory infections and other air quality–related health problems than the general public. Residential areas are also sensitive to poor air quality because people usually stay home for extended periods of time. The closest sensitive receptors to the Proposed Project site are rural residences approximately 1.1 miles to the east.

3.3.2 Discussion

a) **Less than Significant.** The Proposed Project is located within the jurisdiction of the Butte County Air Quality Management District (BCAQMD). The BCAQMD is the local agency responsible for compliance with federal and state standards and ensuring that air quality conditions are maintained. The BCAQMD and the Proposed Project site are located in Northern California in the Sacramento Valley Air Basin. The Air Pollution Control Districts and Air Quality Management Districts (Districts) for the counties located in the northern portion of the Sacramento Valley together establish the Northern Sacramento Valley Planning Area (NSVPA). The NSVPA Districts were designated as nonattainment for the ozone California ambient air quality standards (CAAQS) and agreed to jointly prepare an Air Quality Attainment Plan. Since the preparation of the 2012 and 2015 Plans, the NSVPA has observed improvements in the monitoring levels of ozone, especially in Glenn County and Colusa County, which were designated as attainment for the ozone CAAQS effective July 1, 2014. Sutter and Yuba Counties were designated as nonattainment-transitional[2] effective September 25, 2010 and remain so. The remaining counties (Butte, Tehama, and Shasta) remain nonattainment. A significant impact would occur if a project conflicted with the 2021 Plan by not mirroring assumptions of the plan regarding population growth and vehicle-miles-traveled.

As described below under checklist item b), the Proposed Project's emissions of NO_X (an ozone precursor) would not be expected to exceed BCAQMD's significance threshold during construction activities. Construction of the Proposed Project would be short-term and temporary and the increase in criteria pollutant emissions from off- and on-road equipment exhaust would not conflict with the applicable air quality plans. Because construction emissions are not expected to exceed the BCAQMD or General Conformity

[2] HSC §40925.5 Nonattainment-transitional district is one that does not exceed the state standard more than three times at any monitoring location in a single calendar year.

de minimis thresholds for NO_X, and because the Proposed Project would not conflict with the 2021 Plan, this construction impact would be less than significant.

b) **Less than Significant Impact with Mitigation Incorporated.** Construction activities are short term and typically result in combustion exhaust emissions (e.g., vehicle and equipment tailpipe emissions), including ozone precursors (ROG and NOx), and PM from combustion and in the form of dust (fugitive dust). Emissions of ozone precursors and PM are primarily a result of the combustion of fuel from on-road vehicles and off-road equipment.

Pollutant emissions associated with construction of the Proposed Project would be generated from the following general construction activities: (1) ground disturbance from grading, excavation, etc.; (2) vehicle trips from workers traveling to and from the Proposed Project site; (3) trips associated with delivery of construction supplies to, and hauling debris from, the Proposed Project site; and (4) fuel combustion by on-site construction equipment. These construction activities would temporarily generate air pollutant emissions, including dust and fumes. The amount of emissions that would be generated on a daily basis would vary, depending on the intensity and types of construction activities that would occur simultaneously. Overall, construction activities associated with the Proposed Project would occur over a period of approximately 6 months, starting in the spring of 2026. With implementation of **Mitigation Measure AQ-1**, the Proposed Project's construction-related impacts would be further reduced to less-than-significant levels.

Mitigation Measures

Mitigation Measure AQ-1: Implement Standard Air Quality Construction Mitigation Measures.

During all phases of construction, the following procedures shall be implemented:

- Prepare and Implement a Fugitive Dust Control Plan.
- The contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained prior to and for the duration of onsite operation.
- Limiting idling time to 5 minutes – saves fuel and reduces emissions. (State idling rule: commercial diesel vehicles – 13 CCR Chapter 10 Section 2485 effective 02/01/2005; off-road diesel vehicles – 13 CCR Chapter 9 Article 4.8 Section 2449 effective 05/01/2008).
- Portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, may require California Air Resources Board (CARB) Portable Equipment Registration with the State or a local district permit. The owner/operator shall be responsible for arranging appropriate consultations with the ARB or the District to determine registration and permitting requirements prior to equipment operation at the site.

With respect to project conformity with the federal Clean Air Act, the Proposed Project's potential emissions would be below minimum thresholds and are below the area's inventory specified for each criteria pollutant designated non-attainment or maintenance for the

Basin. As such, further general conformity analysis is not required. Therefore, this impact would be less than significant.

c) **Less than Significant.** Construction of the Proposed Project would result in the short-term generation of DPM emissions from the use of off-road diesel equipment and from construction material deliveries and debris removal using on-road heavy-duty trucks. As discussed above, DPM is a complex mixture of chemicals and particulate matter that has been identified by the State of California as a TAC with potential cancer and chronic non-cancer effects. The dose to which receptors are exposed is the primary factor affecting health risk from TACs. Dose is a function of the concentration of a substance in the environment and the duration of exposure to the substance. According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments (HRAs), which determine the exposure of sensitive receptors to TAC emissions, should be based on a 30-year exposure period when assessing TACs (such as DPM) that have only cancer or chronic non-cancer health effects (OEHHA 2015)

As there is a residence located approximately 1.1 miles to the east of the Proposed Project site. The increase in lifetime cancer risk and non-cancer hazard index from exposure to construction DPM emissions from the Proposed Project at the nearest receptor is anticipated to be less than the respective BCAQMD thresholds because of the short-term nature of the Proposed Project and the distance from the Proposed Project. This impact would be less than significant.

d) **Less than Significant.** Construction of the Proposed Project would last for approximately 6 months total, up to approximately 12 hours per day. The use of on-site diesel-powered equipment can produce odorous exhaust; however, equipment use at the Proposed Project site would be temporary, and potential odors would not affect a substantial number of people in the vicinity, given the rural nature of the Proposed Project site. Therefore, construction of the Proposed Project would not create objectionable odors that would affect a substantial number of people, and odor impacts would be less than significant.

3.3.3 References

California Air Resources Board (CARB). 2009. *The California Almanac of Emissions and Air Quality—2009 Edition*. Chapter 5, "Toxic Air Contaminant Emissions, Air Quality and Health Risk."

National Cancer Institute (NCI). 2012. "Lifetime Risk (Percent) of Being Diagnosed with Cancer by Site and Race/Ethnicity, Both Sexes: 18 SEER Areas, 2007–2009." Table 1.14 in *SEER Cancer Statistics Review 1975–2009*. Available: https://seer.cancer.gov/archive/csr/1975_2009_pops09/results_merged/topic_lifetime_risk_diagnosis.pdf. Accessed August 18, 2023.

Office of Environmental Health Hazards Assessments (OEHHA*). Air Toxics Hot Spots Program Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments*. Adopted February, 2015.

3.4 Biological Resources

Would the project:	Significant or Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less than Significant	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 (CDFW) or U.S. Fish and Wildlife Service (USFWS)?	☐	☒	☐	☐
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 CDFW or USFWS?	☐	☒	☐	☐
c) Interfere substantially with the movement of any native resident or migratory fish or wildlife corridors, or impede the use of native wildlife, or other means?	☐	☒	☐	☐
d) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
e) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

3.4.1 Environmental Setting

The Proposed Project site is located on Little Butte Creek just north of Nelson Road. The existing FSG structure spans Little Butte Creek and impounds creek flows (when present) that are comingled with upstream inflows from the Thermalito Afterbay via the Western Main Canal. The land between the FSG and Nelson Road is forested and emergent wetland. The area surrounding the Proposed Project consists of farmlands.

ESA botanist, Chuck Hughes, and biologists, Anna Schwyter and Christy Dawson, conducted reconnaissance-level surveys of the Proposed Project area on July 25, 2023. The surveys were conducted to document sensitive species and wildlife and plant habitat observed in and adjacent to the Proposed Project area and to conduct an aquatic resources delineation in the Proposed Project area.

All biological resource field surveys were informed by a desktop review of historic and current aerial imagery, subscription-based biological resource databases, and publicly available citizen science data. This section describes the terrestrial and aquatic biological resources that are known or that have the potential to occur in the Proposed Project area. Biological resources are common

vegetation, wildlife, and fisheries resources; sensitive habitats; plant communities; and special status plant, wildlife, and fish species. **Appendix A** identifies all state and federally listed special status species that could potentially occur in the Proposed Project area, their legal status, their habitat or flowering period, and their potential to occur in the Proposed Project area.

The impact analysis presented in this section focuses on those biological resources identified as potentially significant in the Environmental Checklist. The Proposed Project's potential impacts on biological resources are analyzed below. All potential impacts would be mitigated to less than significant levels.

Existing Habitat

The Proposed Project area is in a riparian setting along Little Butte Creek near the bottom of the Sacramento Valley. Elevation ranges from approximately 97–106 feet. Topography is relatively flat, except for the banks of waterways and relief of several feet in the riparian forest. Soils consists mostly of silt loam or silty clay loam nonsaline alluvial soils subject to flooding (Dodgeland and Farwell series are the primary components; ESA 2023). The Proposed Project area includes margins of open water, riparian forest, grassland, and limited areas of emergent herbaceous vegetation. Nelson Road, the slide gates, and a dirt road around the riparian forest are the developed portions of the Proposed Project area. **Appendix B** contains a vegetative communities map.

Little Butte Creek

Little Butte Creek is a perennial creek along the margins of the Proposed Project area. Little Butte Creek is partially controlled by the slide gates in the Proposed Project area, which divert water used for irrigation. Much of Little Butte Creek is open water with a substantial current that generally does not provide potential habitat for vegetation, but the margins of the open water areas, and in particular the area below the slide gates, does provide potential habitat. The margins of the open water consist of relatively steep banks dominated by herbaceous vegetation including Johnson grass (*Sorghum halepense*), nutsedge (*Cyperus* spp.), dallis grass (*Paspalum dilatatum*), Uruguayan water primrose (*Ludwigia hexapetala*), and ruderal species from the adjacent dirt road.

The area downstream of the slide gates is different in character than the steeper banks along open water areas. This area has gentler and more uneven banks, with topographic benches present that are vegetated and seasonally exposed. Willows (*Salix* spp.) are common along the banks. Uruguayan water primrose is dominant on the benches and almost the only species present in some areas.

Forested Wetland and Riparian Forest (Great Valley Mixed Riparian Forest)

The forested wetland meets wetland criteria. The riparian forest is slightly higher in elevation and does not meet wetland criteria but has similar vegetation. They are thickly vegetated areas of uneven topography. Most of the area is bounded by the dirt road and Nelson Road. Smaller strips are on the southeast side of Nelson Road, and the northeast side of Little Butte Creek. Vegetation is dominated by trees including valley oak (*Quercus lobata*), Fremont cottonwood (*Populus fremontii* var. *fremontii*), and willows. The tree canopy is closed in many areas. The shrub layer is dominated by California button willow (*Cephalanthus occidentalis*) and the nonnative invasive

Himalayan blackberry (*Rubus armeniacus*). The herb layer is very sparse and largely unvegetated due to deep shade near the ground surface. The conditions meet the description of Great Valley Mixed Riparian Forest (Holland 1986), a sensitive natural community included in the California Natural Diversity Database. The forested wetland and riparian forest may be categorized under the current CDFW (CDFW 2023a) natural communities list as Fremont cottonwood – arroyo willow forest (61.130.23).

Emergent Wetland

The emergent wetland consists of the lowest area within the riparian forest, which is linear and may be a water conveyance ditch that is no longer used. The emergent wetland is in deep shade and is largely unvegetated, although there is dense riparian forest along the margins. The bottom is mostly bare soil and leaf litter, with sparse patches of common tule (*Schoenoplectus acutus* var. *occidentalis*) and woolly rose-mallow (*Hibiscus lasiocarpos* var. *occidentalis*; see further discussion below).

Grassland

There is upland grassland in the east end of the Proposed Project area on both sides of Nelson Road. The grassland is dominated by tall wheat grass (*Elymus ponticus*), bromes (*Bromus* spp.), Bermuda grass (*Cynodon dactylon*), bird's-foot trefoil (*Lotus corniculatus*), prickly lettuce (*Lactuca serriola*), and yellow star-thistle (*Centaurea solstitialis*), mostly nonnative species. There are a few small and widely-spaced trees and shrubs present.

Aquatic Resources

Federal and State Protected Wetlands and Waters

Wetlands are ecologically complex habitats that support a variety of both plant and animal life. In a jurisdictional sense, the federal government defines wetlands in Section 404 of the Clean Water Act (CWA) as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support (and do support, under normal circumstances) a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3[b] and 40 CFR 230.3). Under normal circumstances, the federal definition of wetlands requires three wetland identification parameters be present: wetland hydrology, hydric soils, and hydrophytic vegetation. Examples of wetlands include freshwater marsh, seasonal wetlands, and vernal pool complexes that have a hydrologic link to other waters of the United States (see definition below for "other waters of the United States"). The U.S. Army Corps of Engineers (USACE) is the responsible agency for regulating wetlands under Section 404 of the CWA, while the U.S. Environmental Protection Agency (EPA) has overall responsibility for the CWA.

Other waters of the United States refers to those hydric features that are regulated by the CWA but are not wetlands (33 CFR 328.4). To be considered jurisdictional, these features must exhibit a defined bed and bank (for channels) and an ordinary high-water mark. Examples of other waters of the United States can include rivers, creeks, ponds, and lakes.

Since its inception, the definition of the Waters of the U.S. has been a litigious issue. Most recently, the Supreme Court, ruling in *Sackett v. Environmental Protection Agency*, sharply limited the

scope of the federal Clean Water Act's protection for the nation's waters. As a result of this decision, on August 29, 2023, the U.S. Environmental Protection Agency (EPA) and the USACE issued a final rule that amends the "Revised Definition of 'Waters of the United States'" to conform key aspects of the regulatory text to the U.S Supreme Court's decision.

Under the amended Revised Definition of "Waters of the United States," the term "waters of the United States" was defined as follows (33 CFR 328.3(a)):

(1) Waters which are:

  (i) Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

  (ii) The territorial seas; or

  (iii) Interstate waters;

(2) Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section; To meet this category, you must be able to demonstrate that the current impoundment would have met the criteria of a water of the U.S. at the time of impoundment. Meaning that prior to the impoundment the feature would have met a(1), a(3), a(4) or a(5). This usually requires using historic aerial photos/maps or historic topo maps.

(3) Tributaries of waters identified in paragraph (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;

(4) Wetlands adjacent to the following waters:

  (i) Waters identified in paragraph (a)(1) of this section; or

  (ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;

(5) Intrastate lakes and ponds not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section.

In addition, the amended regulations include eight types of excluded waters (33 CFR 328.3(b)) which are not ''waters of the United States'' even where they otherwise meet the terms of paragraphs (a)(2) through (5) of this section:

(1) Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;

(2) Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA;

(3) Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;

(4) Artificially irrigated areas that would revert to dry land if the irrigation ceased;

(5) Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;

(6) Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;

(7) Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and

(8) Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

A wetland delineation was conducted for the Proposed Project by ESA in July 2023 (ESA 2023). The wetland delineation identified 0.991 acre of waters of the United States within the Proposed Project that may be subject to regulation under Section 404 of the CWA and Section 401 of the State and an additional 0.907 acre of potentially jurisdictional waters of the State under the Porter-Cologne Water Quality Control Act. The wetland delineation has not yet been verified and should be considered preliminary until verification is received from USACE or RWQCB.

Potentially jurisdictional aquatic resources within the Proposed Project area consist of emergent and forested wetlands and Little Butte Creek. Potentially jurisdictional features within the Project area are summarized in **Table 3.4-1**.

TABLE 3.4-1
AQUATIC RESOURCES

Cowardin Classification	State Acreage	Federal Acreage[1]	Linear Feet
Wetlands			
Emergent Wetland- Palustrine, emergent (PEM)	0.046		-
Forested Wetland-Palustrine, forested (PFO)	0.861		-
Other Waters			
Little Butte Creek—Riverine (R2UBH)	0.991	0.991	1,021
Aquatic Resources Total:	**1.898**	**0.991**	**1,201**

NOTE:

1. Under Sackett, only wetlands abutting a waters of the U.S. are likely to be waters of the U.S. The forested wetlands are separated from Little Butte Creek by uplands. Sackett may allow the inclusion of relatively permanent waters as waters of the U.S.

SOURCES: FGDC 2013; data compiled by Environmental Science Associates in 2023.

Sensitive Natural Communities

A sensitive natural community is a biological community that is regionally rare, provides important habitat opportunities for wildlife, is structurally complex, or is in other ways of special concern to local, state, or federal agencies. Most sensitive natural communities are given special consideration

because they perform important ecological functions, such as maintaining water quality and providing essential habitat for plants and wildlife. Some plant communities support a unique or diverse assemblage of plant species and therefore are considered sensitive from a botanical standpoint. CEQA may identify the elimination of such communities as a significant impact.

Sensitive natural communities include: a) areas of special concern to federal, state, or local resource agencies; b) areas regulated under Section 404 of the CWA; c) areas protected under Section 402 of the CWA, and; d) areas protected under state and local regulations and policies. Habitat types within the Proposed Project that would be considered sensitive by regulatory agencies include wetlands and other waters of the United States and California and riparian habitat.

Special Status Plants and Wildlife

California Natural Diversity Database (CNDDB 2023b), USFWS Official Species List, and the California Native Plant Society list were obtained for the USGS 7.5-minute topographic map nine quad search of the Proposed Project (Appendix A; CDFW 2023b, USFWS 2023). The lists identified species with a potential to occur based on known occurrences in the vicinity of the Proposed Project area. Habitats within the Proposed Project area were assessed for their potential to support special status species using information about local species occurrences and species' habitat requirements, in combination with the site visits described above. Special status plants and wildlife species with potential to occur in the Proposed Project area are described below.

Special Status Plants

All plant species observed in the Proposed Project area are listed in Appendix B. Two special status plants were found in the Proposed Project area, woolly rose-mallow and bristly sedge (*Carex comosa)*. CRPR Rank 1 and 2 species are considered to meet state listing criteria and potential impacts must be considered under CEQA. Locations of special status plants are shown in Appendix B.

Woolly rose-mallow

Woolly rose-mallow is a CRPR 1B.2 plant. This species is often found in riprap on sides of levees in freshwater marshes and swamps and is identifiable from June to September. This species was observed in the riparian patch between the two roads. A total of 77 woolly rose-mallow plants were identified in the Proposed Project area. All of the woolly rose-mallow plants were found in the emergent wetland or nearby areas of riparian forest.

Bristly sedge

Bristly sedge is a CRPR 2B.1 plant. This species is found in coastal prairie, margins of marshes and swamps, and valley and foothill grassland from 0 to 625 meters. This species is identifiable from May to September. This species was observed downstream of the existing FSG. A total of 10 bristly sedge plants were identified in the Proposed Project area. All of the bristly sedge plants are below the slide gates and on alluvial benches in Little Butte Creek. The bristly sedge is growing in open, sunny areas in dense patches of nonnative invasive Uruguayan water primrose.

Special Status Wildlife

Several species known to occur in or near the Proposed Project area are protected by federal and/or state endangered species laws (FESA/CESA respectively) or have been designated as Species of Special Concern by CDFW. In addition, Section 15380(b) of the California Environmental Quality Act (CEQA) Guidelines defines rare, endangered, or threatened species that are not included in any listing. Species recognized under these terms are collectively referred to as special status species. Of the wildlife species identified in the lists in Appendix A, ten special status wildlife species have moderate to high potential to occur within or adjacent to the Proposed Project area (**Table 3.4-2**) or were observed within the Proposed Project area. Species not included either had a low potential or no potential to occur based on habitat availability and size and current known range of each species. Little Butte Creek joins Butte Creek in the upper and lower portions of the lower reach, but check dams prevent their flows from entering Butte Creek to keep salmon from straying into these channels; therefore, there is no chance of salmonids occurring in the Proposed Project area. The site contains numerous flowering plants and shrubs that could provide suitable foraging habitat for the Crotch's bumble bee (*Bombus crotchii*) and monarch butterfly (*Danaus plexippus*). The northwestern pond turtle (*Emmys marmorata*), a California species of special concern and a USFWS species proposed for listing under FESA, and the state and federally threatened giant garter snake (*Thamnophis gigas*) both have the potential to occur within aquatic and upland habitats within the Proposed Project area (Table 3.4-2). Special status birds, such as tricolored blackbird (*Agelaius tricolor*), Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*) and western burrowing owl (*Athene cunicularia*) may use adjacent habitats and the Project area for nesting and foraging. Greater sandhill crane (*Grus canadensis tabida*) may use the Proposed Project area or adjacent habitats for winter foraging and roosting sites. The western red bat (*Lasiurus blossevillii*) may also use the riparian habitat for roosting and foraging.

Crotch's Bumble Bee

The Crotch's bumble bee was petitioned to be added to the State endangered species list and was listed as a candidate species by CDFW in June 2019. In November 2020, the Sacramento Superior Court overturned that ruling, stating that the California Endangered Species Act does not protect terrestrial invertebrates. However, on May 31, 2022, the Third Appellate Court District reversed Sacramento Superior Court's ruling, and therefore, CDFW resubmitted the previously vacated candidate-for-listing petition package for Crotch's bumble bee to the California Fish and Game Commission. Thus, the Crotch's bumble bee was included in this report, because it may meet the criteria for listing and therefore be considered a special status species in conformance with Section 15380(d) of the CEQA Guidelines.

Crotch's bumble bees inhabit open grassland and scrub habitats throughout California. Crotch's bumble bees primarily nest underground in mammal burrows but are occasionally observed in old logs and cavities in trees, among other aboveground locations. They are generalist foragers, with short tongues, and thus prefer foraging on open flowers with short corollas. They overwinter in soft disturbed soil or under leaf litter (CDFW 2019).

CNDDB documented occurrences are limited in the Central Valley, but that may partially be due to under reporting. Recent efforts by the Xerces Society to determine the species status have resulted in additional surveys and resulted in an increased number of occurrences in the Central Valley. The closest verified occurrence was in 2022, in Chico, approximately 15 miles to the north. Suitable

foraging habitat occurs in the Proposed Project area in annual grassland and the riparian scrub habitat. Suitable overwintering may occur in annual grasslands that are not irrigated. Therefore, there is a moderate potential for this species to occur in the Proposed Project area.

TABLE 3.4-2
POTENTIAL FOR SPECIAL STATUS SPECIES TO OCCUR IN THE FSG PROPOSED PROJECT AREA

Scientific Name **Common Name**	**Listing Status CDFW/USFWS**	**General Habitat**	**Potential to Occur in the Modified Project Area**
Invertebrates			
Bombus crotchii Crotch bumble bee	SC/--	Nests, forages, and overwinters in meadows and grasslands with abundant floral resources and available underground nesting habitat in fossorial animal burrows. Range is throughout California, but more common in the Sierra Nevada and Coast Ranges than in the Central Valley.	**Moderate.** Grassland, riparian, and shrub habitat is available that provides suitable forage for bumble bees. Although the Proposed Project is outside of the documented range, recent studies conducted by the Xerces Society have documented the bee in Butte County near Chico (Xerces 2022; verified) and Paradise (Xerces 2023; pending verification).
Danaus plexippus Monarch butterfly	FC/--	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico in wind-protected tree groves with nectar and water sources nearby. Milkweed (*Asclepias* sp.) is host plant.	**Moderate.** The proposed project area is in the migration range and provides potential suitable habitat.
Reptiles			
Thamnophis gigas Giant gartersnake	FT/ST	Permanent or semipermanent water and dense emergent vegetation; freshwater marshes, streams, and canals with permanent water.	**High.** There are several documented occurrences in the vicinity of the project area and high quality aquatic habitat occurs within the project area.
Emys marmorata Northwestern pond turtle	SSC/-FP	Occurs in perennial ponds, lakes, rivers and streams with suitable basking habitat (mud banks, mats of floating vegetation, partially submerged logs) and submerged shelter.	**High.** High quality aquatic habitat occurs within the project area.
Birds			
Agelaius tricolor Tricolored blackbird	ST/--	Freshwater marsh, swamp, wetland, and riparian scrub such as blackberry; highly colonial; requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	**Moderate.** Emergent wetland nesting habitat occurs adjacent to the Proposed Project in the surrounding water ways. Current and historic CNDDB records of tricolored blackbird occur in or within 1 mile of the Proposed Project area.
Grus canadensis tabida (wintering) Greater sandhill crane	ST/--	Annual and perennial grassland habitats, pastures, moist croplands with rice or corn stubble, and open, emergent wetlands. Typically nests in mounds of wetland plants or hummocks in remote portions of extensive wetlands. Sometimes nests in grass-lined depressions on dry sites.	**High.** Sandhill cranes were observed in nearby rice field in September 2024. They were not identified to subspecies. Suitable winter foraging habitat could be present adjacent to the Project area. This species is known to winter, but does not breed in the Central Valley, wintering only.

TABLE 3.4-2
POTENTIAL FOR SPECIAL STATUS SPECIES TO OCCUR IN THE FSG PROPOSED PROJECT AREA

Scientific Name **Common Name**	**Listing Status CDFW/USFWS**	**General Habitat**	**Potential to Occur in the Modified Project Area**
Athene cunicularia Western burrowing owl	SC/--	**General**: Open, dry, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. **Micro**: Subterranean nester, dependent upon burrowing mammals, most notably the California ground squirrel.	**Moderate:** This species is known to occur in the vicinity and suitable habitat occurs within and adjacent to the Proposed Project Area along the levee roads and farmland.
Buteo swainsoni Swainson's hawk	ST/--	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural lands with groves or lines of trees. Often nests near riparian systems.	**Moderate:** There is limited nesting habitat in the Proposed Project area but there are several large trees within 0.5 miles of the area that could support nesting. Suitable grassland agricultural foraging habitat is present in and adjacent to the Proposed Project area.
Coccyzus americanus Western Yellow-billed cuckoo	SE/FT	In California, western cuckoos are largely restricted to river valleys in the north-central (*e.g.*, Sacramento River) and southwestern (*e.g.*, Kern River) regions. Western cuckoos prefer to nest in willows (*Salix* spp.), cottonwoods (*Populus* spp.), and mesquites (*Prosopis* spp.), but they will also use orchards.	**Moderate.** Small patches of riparian habitat may be used by transient birds but provides submarginal nesting habitat do the small area. There are known occurrences within 5-miles of the project area.
Elanus leucurus (nesting) White-tailed kite	CFP/ --	Cismontane woodland, marsh and swamp, riparian woodland, valley and foothill grassland, and wetlands. Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**Moderate.** Suitable nest trees are present and there is suitable foraging habitat within grasslands, croplands, and marsh habitat in and adjacent to the project area. While there are no known nesting occurrences of white-tailed kites within the quad search area, there is a potential for them to occur. This species is underreported in the CNDDB.
Other birds protected by the Migratory Bird Treaty Act (MBTA).	MBTA	Various habitats.	**Present**. Several native bird species were observed during the site visits, such as Cooper's hawk, turkey, great egret, great blue heron, pied-billed grebe, black phoebe. Nesting marsh wren were observed in the wetlands and nesting swallows under the bridge just east of the Proposed Project.
Mammals			
Lasiurus *blossevillii* Western red bat	SSC/--	Associated with riparian habitat. Roosts primarily in the foliage of trees or shrubs but may also occasionally use caves. Day roosts commonly in edge habitats.	**Moderate**. This species may roost in the denser patches or riparian habitat in the proposed project area; however, roosting is not reported by the CNDDB within the nine-quadrangle area that includes the proposed project area.

NOTES: MBTA: Migratory Bird Treaty Act

Federal
FE = listed as endangered under the Federal Endangered Species Act;
FT = listed as threatened under the Federal Endangered Species Act.
FC = listed as a candidate species under the Federal Endangered Species Act.
FP = listed as a proposed species under the Federal Endangered Species Act.

State

SE = listed as endangered under the California Endangered Species Act;
ST = listed as threatened under the California Endangered Species Act.
SC = listed as a candidate species under the California Endangered Species Act.
CSC = listed as a California Species of Special Concern
CFP = Listed as a California Fully Protected Species

SOURCE: U.S. Fish and Wildlife Service. 2023. Information for Planning and Consultation (IPaC). List of threatened and endangered species that may occur in the Western Canal Water District Front Slide Gates Project Area. September 18, 2023. Project Code: 2023-0130234 CNDDB Nelson Nine Quad Search September 18, 2023. Xerces Society Bumble Bee Watch, https://www.bumblebeewatch.org/ Accessed 9/29/2023.

Monarch Butterfly

The monarch butterfly is a federal candidate species and not yet listed or proposed for listing under the Endangered Species Act. In the western U.S. monarch butterflies migrate in the fall and overwinter at sites along the Pacific coast and Central Valley. Monarch's host plant, milkweed, and other flowering plants are necessary for monarch butterfly habitat-adult monarchs feed on the nectar of many flowering plants during breeding and migration, but they can only lay eggs on milkweed plants (USFWS 2022). No milkweed was observed within the Proposed Project area during botanical surveys; therefore it is unlikely monarchs would use the site for laying eggs. However, the Proposed Project area does lies in the migration route of monarch butterflies and does have nectar sources that could support foraging individuals.

Northwestern Pond Turtle

The northwestern pond turtle is a moderately-sized aquatic turtle commonly found in ponds, lakes, marshes, rivers, streams, and agricultural ditches with rocky or muddy substrates. Northwestern pond turtle habitat often includes shoreline basking areas that may or may not be bordered by aquatic vegetation. Aquatic sites are often within woodlands, grasslands, and open forests, between sea level and 6,000 feet in elevation. Northwestern pond turtles bask on logs or other objects when water temperatures are lower than air temperatures. Their nests are created in upland areas with friable soils, often up to 0.25 miles from an aquatic site (Jennings and Hayes 1994; Stebbins 2003; Zeiner et al. 1988).

Northwestern pond turtles are discontinuously distributed throughout California west of the Cascade-Sierran crest (Jennings and Hayes 1994). There are no northwestern pond turtle occurrences documented in the CNDDB within 5 miles of the Proposed Project area. However, Little Butte Creek provides habitat for the northwestern pond turtle and they are likely to utilize the Proposed Project area.

Giant Garter Snake

Giant garter snakes inhabit agricultural wetlands including irrigation and drainage canals, sloughs, ponds, small lakes, low-gradient streams, and adjacent uplands in the Central Valley. Giant garter snakes are often found within these aquatic features especially when emergent vegetation including cattails and bulrushes are present. Because most of its natural habitat has been lost, giant garter snakes also live in rice fields (USFWS 2017). Rice fields provide surface water during the summer when the snakes are active and marsh-like conditions provide the cover, habitat, and prey required for giant garter snake to survive (Halstead et al. 2010). The active season extends from April 1 to October 1. Giant garter snakes inhabit small mammal burrows and other soil crevices above flood elevations during this inactive period (USFWS 2017).

There are numerous giant garter snake occurrences documented within 5 miles of the Proposed Project. Little Butte Creek provides high quality aquatic habitat. Upland habitat is limited to areas that are outside of the flood zone.

Tricolored Blackbird

Ninety percent of all breeding adults are found in the Central Valley (Hamilton 2000). Breeding occurs from mid-March through early August (Meese et al. 2014), and autumnal breeding (September through November) has been documented at several sites in the Central Valley (Orians 1960). The species is highly colonial in its nesting habits and forms dense breeding colonies in a variety of substrates. Historically, most colonies were established in freshwater marshes, but in the absence of these habitats, tricolored blackbirds will nest in riparian scrublands and forests, patches of Himalayan blackberry, arundo, grain and silage fields, and a variety of other similarly structured vegetation (Meese et al. 2014). Dense stands of Himalayan blackberry support the largest proportion of tricolored blackbird nesting throughout California (Meese 2014). During the nonbreeding season, tricolored blackbirds form large, often multispecies flocks and range more widely than during the breeding season (Beedy 2008).

There is potential for tricolored blackbird to nest adjacent to the Proposed Project area within the emergent vegetation. A historical colony was documented in the Proposed Project area in CNNDB and more recently colonies were documented within one mile of the Proposed Project.

Western Burrowing Owl

Western burrowing owls were recently petitioned to be listed as a threatened or endangered species under CESA (CDFW 2024). They inhabit grassland, desert, and open shrub habitats throughout the state from sea level to approximately 5,300 feet (Zeiner et al. 1988-1990). Unlike many sensitive species, burrowing owls persist and even thrive in some landscapes that are highly altered by human activity. The characteristics of suitable habitat are burrows for roosting and nesting, and relatively short vegetation with only sparse shrubs and taller vegetation. Individuals in agricultural environments nest along roadsides and water conveyance structures. Breeding occurs February through August (Haug et al. 1993; Thomsen 1971).

Burrowing owls have a moderate potential to occur in the Proposed Project area due to their preference of habitat in disturbed and agricultural lands. Occurrences as close as 1.5 miles from the proposed project area have been documented on disturbed and ruderal land (CNDDB 2023).

Swainson's Hawk

Swainson's hawk is State listed as threatened. It once occupied large grassland and shrub steppe habitats, as well as canyons, foothills, and smaller interior valleys in otherwise mountainous regions. Currently, the species is most common in the Central Valley and Great Basin. Nesting habitat for Swainson's hawk includes mature trees with relatively dense canopies such as oaks or cottonwoods in or near riparian habitat, agricultural fields, or suburban neighborhoods near suitable foraging habitat. They forage in grasslands, irrigated pastures, and grain fields. In California, Swainson's hawks begin nesting in late March, and the young usually leave the nest (fledge) by August.

There are several CNDDB records of Swainson's hawk within five miles of the survey area which mostly occur along the river corridors to the west of the Proposed Project area. There are trees within 0.5 miles of the Proposed Project that would support nesting Swainson's hawk. Swainson's hawks could also nest in the trees within the Proposed Project area.

Western Yellow-Billed Cuckoo

The western yellow-billed cuckoo is state-listed as endangered and federally listed as threatened. The Western distinct population segment of the yellow-billed cuckoo is currently under 5-year review. The cuckoo breeds throughout the eastern and central U.S. and winter in South America. The western cuckoo once occupied dense riparian habitats throughout California but is now a limited breeder. Currently, in northern California the species is mostly restricted to breeding along the Sacramento River in the Sacramento Valley. Cuckoo's require dense canopies of cottonwoods and willows in river bottoms and other moist habitats with slow-moving water and high humidity. In the absence of this habitat, they have occasionally been observed nesting in walnut orchards in the Sacramento Valley. They forage within the same habitat on their preferred diet of insects, but will also forage on small wild fruits, frogs, and lizards.

The Project Area provides marginal remnant riparian habitat that may be used for foraging or dispersal. However, the riparian habitat in the Project Area does not meet the typical size requirements (50 acres or more of contiguous riparian habitat that is greater than 33-66 feet wide) for home ranges of nesting western yellow-billed cuckoos. Since there is riparian habitat and there are known occurrences within five miles of the Proposed Project, the potential for transient birds to occur is low to moderate.

Sandhill Crane

Sandhill cranes are winter residents and migrants in the Central Valley, arriving during early September and reaching maximum densities during December and January and departing during early March. Sandhill cranes vocalizations were observed in a nearby rie field in September 2024, which occurs within approximately a mile of the Project area.

Lesser sandhill crane is a California species of special concern. They are a large gray, heavy-bodied bird with a long neck, long legs, and red plumage on top of the head. The subspecies range includes much of North America; the population that occurs in the Central Valley breeds in southwestern and south central Alaska and migrates to the Central Valley of California to overwinter (Shuford and Gardali 2008).

Greater sandhill crane is State-listed as threatened under CESA and Fully Protected under California Fish and Game Code. The greater sandhill crane is the largest sandhill crane subspecies, with gray plumage, heavy body, long neck and legs, and red plumage on top of the head. The subspecies range includes much of North America; the population that occurs in the in the Central Valley breeds in small numbers in northeastern California, with larger populations coming from Washington, Oregon, and western Canada, and migrates to the Central Valley of California to overwinter (CDFW 1994).

Foraging habitat between the two subspecies is similar (although there are some individual crop preferences) and consists mainly of harvested corn fields, winter wheat, irrigated pastures, alfalfa fields, and fallow fields. Mid-day loafing typically occurs in wetlands and flooded fields and they occasionally forage and will opportunistically consume small rodents, birds, and invertebrates along agricultural field borders, levees, rice checks, and ditches, and in alfalfa fields or pastures. Night roosting is in shallowly flooded open fields and open wetlands interspersed with uplands and tend to congregate in small to large flocks. Greater and lesser sandhill cranes use similar roost sites and are both sensitive to human disturbance (Littlefield and Ivey 2000).

Surrounding preserves and wildlife refuges as well as adjacent farmlands provide wintering habitat for the sandhill crane.

White-Tailed Kite

The white-tailed kite is a fully protected species under the California Fish and Game Code. This species nests primarily in riparian and lowland habitats often associated with agricultural areas throughout cismontane California. White-tailed kites typically nest in dense vegetation at the tops of oaks, willows, or other native trees. They prey primarily on voles and other diurnal mammals (CDFW 2005). Their numbers and range have increased in the past few decades (CDFW 2005).

There are no documented occurrences in the vicinity of the Project area and they were not observed during the survey; however, white-tailed kites are underreported in CNDDB and they could use the survey area for foraging and adjacent areas for nesting.

Other Breeding and Migratory Birds

The Federal Migratory Bird Treaty Act and California Fish and Game Code protect raptors, most native migratory birds, and breeding birds that could be present in the Proposed Project area. The Proposed Project area provides nesting opportunities for a variety of resident and migratory birds. Common raptor species that may nest in the mature trees of the proposed project area could include red-tailed hawk, red-shouldered hawk, Cooper's hawk, and great horned owl. Wading birds such as the great egret, and the great blue heron are known to forage in the Proposed Project area. Nesting swallows and marsh wrens were observed during the initial survey and a pied-billed grebe (*Podilymbus podiceps*) was observed with young.

Western Red Bat

The western red bat is a California species of special concern. This is a riparian obligate species (i.e., a species dependent on riparian habitat) that is ubiquitous throughout California except in the northern Great Basin region. Western red bats roost individually in dense clumps of tree foliage in riparian areas, orchards, and suburban areas. Individuals have been observed foraging around streetlamps and floodlights in suburban areas.54F

Based on its tendency to roost within tree foliage, this species may be intermittently present in the riparian and woodland habitat in the proposed project area. However, roosting occurrences are not reported by the CNDDB within 5 miles of the proposed project area.

3.4.2 Regulatory Setting

This subsection briefly describes federal, state, and local regulations, permits, and policies pertaining to biological resources as they apply to the proposed Project. The Project proponent would be required to abide by all applicable regulations and permit requirements in effect at the time of construction.

Federal

Federal Endangered Species Act

The FESA protects candidate, threatened, and endangered plants and animals and their critical habitat. Candidate species are those proposed for listing; these species are usually treated by resource agencies as if they were actually listed during the environmental review process. Procedures for addressing impacts to federally listed species follow two principal pathways, both of which require consultation with the USFWS, which administers the FESA for all terrestrial species. The first pathway, Section 10(a) incidental take permit, applies to situations where a non-federal government entity must resolve potential adverse impacts to species protected under the FESA. The second pathway, Section 7 consultation, applies to projects directly undertaken by a federal agency or private Projects requiring a federal permit or approval.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs. Most actions that result in a taking or in permanent or temporary possession of a protected species constitute violations of the MBTA. Examples of permitted actions that do not violate the MBTA are the possession of a hunting license to pursue specific game birds, legitimate research activities, display in zoological gardens, bird banding, and other similar activities. USFWS is responsible for overseeing compliance with the MBTA.

Clean Water Act

The federal Clean Water Act (CWA) was enacted as an amendment to the federal Water Pollution Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to waters of the United States. The CWA serves as the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands.

Section 404

CWA Section 404 regulates the discharge of dredged and fill materials into waters of the United States. *Waters of the United States* refers to oceans, bays, rivers, streams, lakes, ponds, and wetlands. Applicants must obtain a permit from the U.S. Army Corps of Engineers (USACE) for all discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed activity. Waters of the United States are under the jurisdiction of USACE and EPA.

Compliance with CWA Section 404 requires compliance with several other environmental protection laws and regulations. USACE cannot issue an individual permit or verify the use of a general nationwide permit until the requirements of FESA and the National Historic Preservation Act have been met. In addition, USACE cannot issue or verify any permit until a water quality certification or a waiver of certification has been issued pursuant to CWA Section 401.

Section 401

Under CWA Section 401, applicants for a federal license or permit to conduct activities which may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, all projects that require a federal license or federal permit, such as a CWA Section 404 permit, must also comply with CWA Section 401.

State

Porter-Cologne Water Quality Control Act

The State Water Resources Control Board and the Regional Water Quality Control Boards (RWQCBs) (together "Boards") are the principal state agencies with primary responsibility for the coordination and control of water quality. In the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), the Legislature declared that the "state must be prepared to exercise its full power and jurisdiction to protect the quality of the waters in the state from degradation..." (California Water Code section 13000).

The Porter-Cologne Act grants the Boards the authority to implement and enforce the water quality laws, regulations, policies and plans to protect the groundwater and surface waters of the state. Waters of the state determined to be jurisdictional would require, if impacted, waste discharge permitting and/or a CWA Section 401 certification (in the case of a required USACE permit under Section 404). The enforcement of the state's water quality requirements is not solely the purview of the Boards and their staff. Other agencies (e.g., CDFW under Section 5650 of the California Fish and Game Code) have the authority to enforce certain water quality provisions in state law.

California Endangered Species Act

Under the California Endangered Species Act (CESA), CDFW has the responsibility for maintaining a list of endangered and threatened species.[3] Sections 2050 through 2098 of the California Fish and Game Code outline the protection provided to California's rare, endangered, and threatened species. Section 2080 of the California Fish and Game Code prohibits the taking of plants and animals listed under the CESA. Section 2081 established an incidental take permit program for state-listed species. CDFW maintains a list of "candidate species" which are species that CDFW formally notices as being under review for addition to the list of endangered or threatened species.

[3] Section 2070 of the California Fish and Game Code.

Pursuant to the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project site and determine whether the proposed project would have a potentially significant impact on such species. In addition, CDFW encourages informal consultation on any proposed project that may impact a candidate species.

Project-related impacts to species on the CESA endangered or threatened list would be considered significant. Under Section 86 of the California Fish and Game Code "take" is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." "Take" of protected species incidental to otherwise lawful management activities may be authorized under California Fish and Game Code Section 206.591. Authorization from CDFW would be in the form of an Incidental Take Permit.

California Fish and Game Code

Fully Protected Species

Certain species are considered *fully protected*, meaning that the code explicitly prohibits all take of individuals of these species except for take permitted for scientific research. Section 5050 lists fully protected amphibians and reptiles, Section 5515 lists fully protected fish, Section 3511 lists fully protected birds, and Section 4700 lists fully protected mammals.

It is possible for a species to be protected under California Fish and Game Code, but not fully protected. For instance, mountain lion (*Puma concolor*) is protected under Section 4800 et seq., but is not a fully protected species.

Protection of Birds and Their Nests

Under Section 3503 of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the code or any regulation made pursuant thereto. Section 3503.5 of the California Fish and Game Code prohibits take, possession, or destruction of any birds in the orders Falconiformes (hawks) or Strigiformes (owls), or of their nests and eggs. Migratory non-game birds are protected under Section 3800, while other specified birds are protected under California Fish and Game Code Section 3505.

Stream and Lake Protection

CDFW has regulatory authority over streams and lakes and the wetland resources associated with these aquatic systems under California Fish and Game Code Section 1600 et seq. through administration of lake or streambed alteration agreements. Such an agreement is not a permit, but rather a mutual accord between CDFW and a project proponent. Under Section 1600 et seq. of the California Fish and Game Code, CDFW has the authority to regulate work that will "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river lake or stream." CDFW enters into a lake or streambed alteration agreement with the project proponent and can impose conditions in the agreement to minimize and mitigate impacts to fish and wildlife resources. Because CDFW includes under its regulatory authority streamside habitats that

may not qualify as wetlands under the federal CWA definition, CDFW regulatory authority may be broader than USACE jurisdiction.

Pursuant to the California Fish and Game Code, a project proponent must submit a notification of lake or streambed alteration to CDFW before construction. The notification requires an application fee for a lake or streambed alteration agreement, with a specific fee schedule to be determined by CDFW. CDFW can enter into programmatic agreements that cover recurring operation and maintenance activities and regional plans. These agreements are sometimes referred to as Master Streambed Alteration Agreements.

Under Fish and Game Code Section 1602 (Streambed Alteration Agreements), CDFW takes regulatory authority over the stream zone which is defined top of bank or outside extent of riparian vegetation, whichever is the greatest. Within the stream zone, waters of the state of California are typically delineated to include the streambed to the top of the bank and adjacent areas that would meet any one of the three wetland parameters in the USACE definition (vegetation, hydrology, and/or soils). CDFW regulatory authority is not limited to navigable waters or tributaries to navigable waters; however, isolated wetlands and wetlands not associated with a streambed are not subject to CDFW regulatory authority.

Native Plant Protection Act

State listing of plant species began in 1977 with the passage of the California Native Plant Protection Act (NPPA), which directed CDFW to carry out the legislature's intent to "preserve, protect, and enhance endangered plants in this state." The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare and to require permits for collecting, transporting, or selling such plants. CESA expanded on the original NPPA and enhanced legal protection for plants. CESA established threatened and endangered species categories, and grandfathered all rare animals—but not rare plants—into the act as threatened species. Thus, three listing categories for plants are employed in California: rare, threatened, and endangered.

California Rare Plant Ranking System

CDFW works in collaboration with the CNPS to maintain a list of plant species native to California that have low numbers, limited distribution, or are otherwise threatened with extinction. These species are categorized by rarity in the California Rare Plant Ranking (CRPR) system. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CRPR species may receive consideration under CEQA review. The following identifies the definitions of the CRPR:

Rank 1A: Plants presumed extirpated in California and either rare or extinct elsewhere.

Rank 1B: Plants Rare, Threatened, or Endangered in California and elsewhere.

Rank 2A: Plants presumed extirpated in California, but more common elsewhere.

Rank 2B: Plants Rare, Threatened, or Endangered in California, but more common elsewhere.

Rank 3: Plants about which more information is needed—A Review List.

Rank 4: Plants of limited distribution—A Watch List.

3.4.3 Discussion

a) **Less than Significant Impact with Mitigation Incorporated.** No, the Proposed Project would not 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 CDFW or USFWS with incorporation of mitigation measures.

As described in Section 3.4.1, *Environmental Setting*, California Natural Diversity Database (CNDDB 2023b), USFWS Official Species List, and the California Native Plant Society list were obtained for the USGS 7.5-minute topographic map nine quad search of the Proposed Project (Appendix A; CDFW 2023b, USFWS 2023). The lists identified species with a potential to occur based on known occurrences in the vicinity of the Proposed Project. Habitats within the Proposed Project area were assessed for their potential to support special status species using information about local species occurrences and species' habitat requirements, in combination with the site visits described above.

Special Status Plants

Two special status plants were found in the Proposed Project area, woolly rose-mallow and bristly sedge. The current design avoids direct impacts to the 77 woolly rose-mallow plants identified in the Proposed Project area, therefore impacts would be less than significant, and implementation of Mitigation Measure BIO-3 further reduces this impact. Construction associated with the replacement of the FSG structure could result in removal of individuals of bristly sedge, and this would be a potentially significant impact. As part of the final construction design, WCWD adjusted construction access routes and the footprint of the Proposed Project to reduce impacts to bristly sedge. Implementation of **Mitigation Measure BIO-3** would further reduce this impact to a less-than-significant level, because bristly sedge individuals that cannot be avoided would be transplanted and/or seeds would be collected to propagate new plants within the Proposed Project area.

Special Status Wildlife

Vegetation removal associated with site preparation for construction would be minimal but it could result in loss of a food source for monarch butterflies and Crotch's bumble bee; however, it is not expected to be a substantial loss of habitat. Areas temporarily impacted would be restored to pre-existing conditions and where appropriate (i.e., non-agricultural areas) native plant would be used to support these species. Areas permanently impacted, including aquatic habitat that supports flowering shrubs and vegetation used for foraging when not flooded, would be mitigated as described in Mitigation Measure BIO-2. Temporary and permanent impacts to butterfly and bumble bee habitat during construction may be significant but would be reduced to a less-than-significant level with implementation of **Mitigation Measures BIO-1, BIO-2, and BIO-4**.

Construction activities could have direct and indirect adverse impacts on giant garter snake and northwestern pond turtle. All activities that involve the use of heavy equipment; or produce disturbances such as noise, dust, smoke, vibrations, and visual disturbance; or

that could accidentally release hazardous materials could have impacts. Approximately 0.45 acres of giant garter snake and northwestern pond turtle aquatic habitat will be temporarily impacted during dewatering and construction. An additional 00.35 acres will be permanently replaced with the construction of the new facility. The use of vehicles and heavy equipment could also result in direct mortality of giant garter snakes or northwestern pond turtles through vehicle strikes when these animals are aboveground, basking on or crossing roads. These species, along with other species using burrows may also be crushed or entombed by vehicles and heavy equipment, resulting in direct mortality. In addition, the potential exists for contaminants, including fuel, oil, other petroleum products, and other chemicals used in maintenance activities, to be accidentally introduced into waterways. In sufficient concentrations, these contaminants would be toxic to special status aquatic wildlife (i.e., giant garter snake, northwestern pond turtle) and their prey species. These impacts to giant garter snake and northwestern pond turtle would be potentially significant, but would be reduced to less-than-significant levels with implementation of **Mitigation Measures BIO-1, BIO-2, BIO-5, BIO-6, and BIO-9**.

Construction of the new facilities and removal of the existing facilities could temporarily impact foraging, nesting, and roosting habitat for a variety of special status birds within the Proposed Project footprint and adjacent habitats, including tricolored black bird, Swainson's hawk, burrowing owl, transient western yellow-billed cuckoos, sandhill crane, and white-tailed kite. The Proposed Project would not create a significant increase in activities in comparison to those already associated with the adjacent farming activities and would be temporary and contained to a small construction and demolition footprint; however this could still create potentially significant impacts. In addition, if Swainson's hawk are nesting within one-half mile of the proposed project during construction activities, the potential would exist for short-term, temporary impacts during the nesting season to active nests from construction dust, noise, and vibration and could potentially result in nest abandonment, loss of young, or reduced health and vigor of eggs or nestlings. Loss of foraging habitat due to alteration of the habitat or temporary loss due to avoidance of common foraging areas during construction could also reduce health and vigor of nestlings resulting in reduced survival rates. This would be a significant impact on Swainson's hawks. If burrowing owls are present, ground disturbance (excavation and backfilling) could result in direct mortality or injury of burrowing owls within burrows and similar nesting features. Such features could be disturbed or destroyed during construction in staging areas. This would also be a significant impact. These impacts would be reduced to a less-than-significant level with implementation of Mitigation Measures **BIO-1, BIO-2, BIO-7, and BIO-9**.

Construction activities would occur during a period that overlaps with the nesting season for numerous other breeding and migratory bird species that are present in the Proposed Project area. Construction work, including removal of vegetation or trees, during the nesting season could result in the destruction of nests and eggs and mortality of nestlings, which would be a potentially significant impact. These impacts would be reduced to a less-than-significant level with implementation of **Mitigation Measures BIO-1, BIO-2, BIO-7, and BIO-9**.

The period of construction activities would overlap the bat maternity season (generally May 1 to August 31). Tree removal in riparian habitat could adversely affect breeding and non-breeding pallid bats by causing the loss of established roosts and potential roosting habitat. Although minimal tree removal is anticipated, general construction-related disturbance, including exposure to noise, vibration, and dust, could adversely affect breeding and non-breeding bats. This would be a potentially significant impact, but these impacts would be reduced to a less-than-significant level with implementation of **Mitigation Measures BIO-1, BIO-2, BIO-8, and BIO-9**.

As stated in Section 3.4.1, Little Butte Creek joins Butte Creek in the upper and lower portions of the lower reach, but check dams prevent their flows from entering Butte Creek to keep salmon from straying into these channels; therefore, there is no chance of salmonids occurring in the Proposed Project area. However, because other native fish and aquatic species could be present, a fish relocation plan is recommended in **Mitigation Measure BIO-10**.

Summary

Adverse effects on special status plants and wildlife could occur as a result of construction activities. As described previously, these adverse effects include mortality, injury, and harassment of individuals, along with the permanent or temporary loss or modification of habitat.

The most substantial impact would result from temporarily dewatering habitat and excavating aquatic and upland areas that may potentially support giant garter snake and northwestern pond turtle. Because special status wildlife species supported by the affected habitats are considered to be declining, rare, threatened, or endangered by California or federal fish and wildlife agencies, the loss or modification of habitat for these species or harassment or mortality of individuals is considered a potentially significant impact. Implementation of **Mitigation Measures BIO-1 through BIO-9~~1~~10** would reduce impacts to less than significant with the implementation of training, pre-construction surveys, avoidance of resources, and compensatory mitigation.

Mitigation Measures

Implementation of the following mitigation measures, including WEAP training, special status species surveys, and compensatory mitigation would reduce impacts to special status plants and wildlife to a less-than-significant level. This list includes general measures that apply to all construction activities as well as resource-specific measures.

Mitigation Measure BIO-1: Worker Environmental Awareness Protections Training.

A qualified biologist will conduct a pre-construction Worker Environmental Awareness Protections Training (WEAP) for all activities. WEAP trainings are project-specific and cover potential environmental concerns or considerations, including, but not limited to, awareness of biological resources, special status species

near project sites, jurisdictional waters, cultural resources, environmentally sensitive areas, and/or avoidance areas.

Mitigation Measure BIO-2: Avoid and Minimize Effects on Sensitive Habitat.

During construction, design and or refinement of proposed project activities would be implemented to reduce impacts on sensitive habitat to the extent practicable. Refinements implemented to reduce the loss of riparian and wetland/waters habitat would include reducing the impact footprint, locating staging and access areas to avoid impacts to riparian and wetland/waters habitat, and constructing within the existing disturbed areas of the Proposed Project. Where practicable, trees would be avoided and not impacted by rock slope protection or other construction efforts.

Pesticide and herbicide use should be avoided if possible and restricted to use in both location and timing per the USFWS *Western Monarch Butterfly Conservation Recommendations* (USFWS 2023).

Temporary and permanent impacts to riparian habitat and wetland/waters that cannot be mitigated through avoidance, minimization, or remediation will be mitigated to ensure no net loss through compensation, by restoring riparian and wetlands/waters habitat onsite or at an approved offsite location, mitigation bank, or in-lieu fee program. Riparian and wetlands/waters habitat will not be restored where it would be removed by future maintenance activities. A revegetation plan would be prepared by a qualified biologist or landscape architect and reviewed by the appropriate agencies. The revegetation plan would specify the use of beneficial native plants appropriate for each area that provide a diverse variety of grasses and forbs that support native wildlife species such as the Crotch's bumble bee, monarch butterflies, and nesting birds.

Seeds and plants should be native and insecticide-free and sourced from local distributors. They should include flowering plants that bloom in early spring through late fall.

Mitigation Measure BIO-3: Avoid and Minimize Effects on Rare Plants.

- Bristly-sedge and woolly rose-mallow plants identified during rare-plant surveys would be marked or fenced off as an avoided area during construction if they occur outside of the construction footprint. A qualified biologist would establish a buffer of at least 25 feet around the plants. If a buffer of 25 feet is not possible, the maximum distance possible would be fenced off as a buffer.
- Bristly sedge is located within the construction footprint and cannot be fully avoided during construction. A detailed relocation and mitigation/conservation plan that includes long-term strategies for the conservation of the species should be developed in coordination with CDFW. Bristly sedge seeds shall be collected and/or live plants shall be propagated or replanted within areas temporarily disturbed after construction is completed as agreed upon by CDFW.
- Herbicides would not be used within 3 meters (10 feet) of a known bristly-sedge or woolly rose-mallow plant. All chemicals would be applied using a backpack sprayer or similar direct application method.

Mitigation Measure BIO-4: Bumble Bee Avoidance and Minimization.

Before construction activities, a qualified biologist would conduct a pre-construction survey, during the flight period for worker and male bees late March through September, within the construction disturbance area for active Crotch's bumble bee nests. If an active bumble bee nest is located, recommendations for avoiding or minimizing disturbance of the colony would be developed (e.g., establishing a buffer surrounding entry/exits and avoiding direct disturbance).

Mitigation Measure BIO-5: Giant Garter Snake Avoidance, Minimization, and Mitigation.

The Proposed Project area provides quality habitat for giant garter snake. Thus, WCWD proposes to implement standard avoidance and minimization measures during construction activities. The following measures shall be implemented to avoid impacts to giant garter snake:

***Avoidance and Minimization Measures*:**

- WCWD should retain a Designated Biologist responsible for monitoring all project activities, including construction and any ground- or vegetation-disturbing activities. The Designated Biologist should be knowledgeable and experienced in the biology and natural history of GGS. The Designated Biologist should be authorized to stop project activities, if necessary to protect GGS. If directed by the Designated Biologist, WCWD should take appropriate actions to ensure project activities are safely suspended and notify CDFW. Work should not re-initiate until WCWD has consulted with CDFW and can demonstrate compliance with CESA.
- For site access confine heavy equipment to existing roadways to minimize habitat disturbance. Maintain a speed limit of 10 mph on all roadways within the construction area.
- Check under all equipment and materials prior to moving them. When feasible, do not store construction materials or stockpiles within 200 feet of giant garter snake habitat. If materials need to be stored within 200 feet of giant garter snake habitat exclusion fencing shall be installed to prevent snakes from accessing the stockpiled materials or the active construction site.
- All construction activities that occur within 200 feet of giant garter snake habitat shall occur between May 1 and October 1. This is the active period for giant garter snakes and direct mortality is lessened, because snakes are expected to actively move and avoid danger.
- WCWD shall dewater construction areas potentially providing aquatic habitat for giant garter snakes to the extent feasible. Any dewatered aquatic habitat shall remain absent of aquatic prey for at least 5 consecutive days before conducting construction activities. If 5 consecutive days is not feasible then WCWD shall consult with the USFWS and CDFW to apply appropriate measures. If dewatering cannot remove all water, potential giant garter snake prey (i.e., fish and tadpoles) would be removed so that giant garter snakes and other wildlife are not attracted to the construction area.

- Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided giant garter snake habitat within or adjacent to the Proposed Project area as Environmentally Sensitive Areas.
- 24-hours prior to construction activities, the Proposed Project area shall be surveyed for giant garter snakes. Surveys of the Proposed Project area shall be repeated if a lapse in construction activity of 2 weeks or greater has occurred.
- If a giant garter snake is observed in the construction area, work will stop in the vicinity of the snake and allow the snake to leave on its own. Alternatively, qualified individuals approved to handle and relocate giant garter snake—i.e., individuals who possess appropriate federal and California permits for these activities—may capture and relocate the snake. USFWS and CDFW will be notified by telephone or email within 24 hours of a giant garter snake observation in the construction area. If the snake does not voluntarily leave the construction area and cannot be effectively captured and relocated unharmed (e.g., if the snake retreats into an underground burrow or below the water surface), activities in the immediate vicinity of the snake will stop as needed to prevent harm to the snake and USFWS and CDFW will be consulted. After completion of construction activities, all temporary construction debris and materials shall be removed, and habitat would be restored to pre-Project conditions.
- To prevent giant garter snakes from becoming entangled, trapped, or injured, erosion control materials that use plastic or synthetic monofilament netting will not be used in the Project area. Acceptable materials include natural fibers such as jute, coconut, twine, or other similar fibers.

***Compensatory Mitigation*:** To compensate for temporary and permanent loss of giant garter snake habitat associated with the installation of the new facilities, WCWD will remove non-native vegetation within the Proposed Project area that prohibits giant garter snake movement and foraging, restore areas of temporary impacts to pre-project conditions, use bank stabilization methods that are compatible with giant garter snake, and remove the existing facilities. Additionally, WCWD will either purchase mitigation credits at an approved bank or restore additional habitat outside of the proposed project area at a minimum of 3:1 ratio for permanent aquatic impacts, a 2:1 ratio for permanent upland impacts, and a 1:1 ratio for temporary upland and aquatic impacts.

Mitigation Measure BIO-6: Northwestern Pond Turtle Avoidance and Minimization.

WCWD shall implement the following measures to avoid and minimize effects on northwestern pond turtle:

- A qualified biologist shall conduct a pre-construction survey within 3 days before the start of Project activities. If no northwestern pond turtles are observed, WCWD would document that information for the file, and no additional measures shall be required, except as described below for dewatering activities.
- Should any northwestern pond turtles be detected on land during the pre-construction survey, the qualified biologist would identify the location using GPS coordinates. The qualified biologist may relocate any northwestern pond turtles found on land or in aquatic habitat within the construction footprint to suitable aquatic habitat at least 200 feet away from the construction footprint.

- If northwestern pond turtles are observed on land within the construction footprint during construction activities, WCWD would stop work within approximately 200 feet of the turtle, and a qualified biologist would be notified immediately. If possible, the turtle would be allowed to leave on its own and the qualified biologist would remain in the area until the biologist deems his or her presence no longer necessary to ensure that the turtle is not harmed. Alternatively, the qualified biologist may capture and relocate the turtle unharmed to suitable habitat at least 200 feet outside the construction footprint. If a northwestern pond turtle nest is unintentionally uncovered during construction activities, work would stop in the vicinity of the nest until a qualified biologist could evaluate the situation and notify the appropriate agencies.

Mitigation Measure BIO 7: Avoid and Minimize Effects on Nesting Birds.

To avoid and minimize effects on nesting birds, WCWD would implement the following measures:

- Where feasible, construction and maintenance activities that have the potential to affect special-status nesting birds and common nesting birds would occur at times of the year when adverse effects on those species would be avoided. If activities are conducted outside the nesting seasons, typically February 1 to September 15, and no nesting is observed, no additional measures are required to mitigate adverse effects on nesting birds.
- If construction occurs during the nesting season, February 1 to September 15, a breeding season survey for nesting birds, including the yellow-billed cuckoo, would be conducted within 72 hours of the start of construction by a qualified biologist for all vegetation to be removed or disturbed that are located within 500 feet (excluding Swainson's hawks, see below) of construction activities, including grading.
- For Swainson's hawks, an area with a radius of 0.5 mile from construction activities would be surveyed for Swainson's hawk nests. Swainson's hawk surveys would be completed during at least two of the following survey periods: January 1 to March 20, March 20 to April 5, April 5 to April 20, and June 10 to July 30. No fewer than three surveys would be completed in at least two survey periods, and at least one of these surveys would occur immediately before project initiation.
- Western burrowing owl surveys would follow suggested guidelines set forth in CDFW's *Staff Report on Burrowing Owl Mitigation* such as conducting three or more daytime survey visits at least 3 weeks apart during the peak of breeding season from April 15 to July 15 and prior to the start of construction.
- Other migratory bird nest surveys could be conducted concurrent with Swainson's hawk surveys, with at least one survey to be conducted no more than ~~48~~72 hours from the initiation of project activities to confirm the absence of nesting. If the biologist determines that the area surveyed does not contain any active nests, construction activities, including removal or pruning of trees and shrubs, could commence without any further mitigation. If at any time during the nesting season construction stops for a period of 2 weeks or longer, pre-construction surveys would be conducted before construction resumes.

- If nesting birds have been identified within or adjacent to the construction footprint, WCWD would establish avoidance buffers as indicated in **Table 3.4-3**. Reduced buffers may be implemented if recommended by the monitoring biologist and approved by the qualified biologist. Buffers would be marked in the field by a qualified biologist using temporary fencing, high-visibility flagging, or other means that are equally effective in clearly delineating the buffers.

TABLE 3.4-3
REQUIRED BUFFER DISTANCES FOR NESTING BIRDS*

Resource	Buffer Distance
Swainson's hawk	0.5 mile (rural or during use of heavy equipment)
Burrowing owl	160 feet (non-breeding season) and 250-feet (breeding season)
Tri-colored blackbird	300 feet (breeding season)
Sandhill crane	0.25 mile (roosting)
Common nesting birds	100 feet (passerines); 300 feet (raptors); 200 feet (heron or egret rookeries)

NOTE: If maintaining these buffers is not feasible they can be reduced in coordination with CDFW.

- If nesting cuckoos are located the USFWS and CDFW will be contacted to establish appropriate buffers to prevent disturbance of nesting cuckoos during construction. If at any time during the nesting season construction stops for a period of two weeks or longer, pre-construction surveys shall be conducted prior to construction resuming.
- To minimize and avoid the potential indirect impacts to sandhill crane that may occur within or adjacent to the Proposed Project area between September 15 through March 15, during roosting season, pre-activity surveys and an assessment of known roost sites shall be conducted within 0.25 mile of the Project area by a qualified biologist. If roost sites are identified within 0.25 mile of the Project area, the start of large equipment used for construction activities would be delayed to an hour after sunrise and stop an hour before sunset.
- If riparian habitat is removed due to project construction it will be mitigated at a minimum of 1:1 ratio for both permanent and temporary impacts to western yellow-billed cuckoo migration habitat.

Mitigation Measure BIO-8: Bat Avoidance and Minimization.

In advance of tree removal (no more than 6 months), a preconstruction survey for special status bats shall be conducted by a qualified biologist to characterize potential bat habitat and identify active roost sites within the Proposed Project and within a 500-foot radius of the Project footprint. Should potential roosting habitat or active bat roosts be found in trees and/or structures to be removed under the Project, the following measures shall be implemented:

- Removal of trees shall occur when bats are active, approximately between the periods of March 1 to April 15 and August 15 to October 15, and outside of bat maternity roosting season (approximately April 15 – August 31) and outside of months of winter torpor (approximately October 15 – ~~February 28~~March 1), to the extent feasible.

- If bat roosting habitat is present, and activities are scheduled during the maternity season (April 15 to August 31) or the hibernation season (October 15 to March 1), the Proponent shall: 1) conduct pre-construction surveys and 2) develop a Bat Avoidance and Exclusion Plan, if applicable.
- The Designated Biologist should develop a pre-construction Bat Survey Plan (BSP). The BSP shall include a list of potential bat species present, survey method(s), and timing of survey(s). The BSP shall provide justification for timing and methodology of survey design (e.g., habitat characteristics, day length, average ambient air temperatures, local and seasonal conditions). The survey results shall identify: 1) the exact location of all roosting sites (location shall be adequately described and shown on a digital map with GPS coordinates), 2) the number of bats present at the time of visit (count or estimate), 3) species of bat detected, if known (include how the species was identified), and 4) the type of roost(s) [i.e., maternity, hibernaculum, night roost (rest at night while out feeding), or day roost (resting during the day)]. If bats are detected during any survey, and activities are scheduled during the maternity season (April 15 to August 31) or the hibernation season (October 15 to March 1), the Designated Biologist should develop a Bat Avoidance and Exclusion Plan (BAEP). The BAEP should include the following:
    - A bat roost buffer, which would establish an appropriate no-disturbance buffer around bat roosts during maternity (April 15 to August 31) or hibernation (October 15 to March 1) seasons. The Designated Biologist shall clearly delineate habitat and bat roosts within the Project Site with posted signs demarking the avoidance areas using stakes, flags, and/or rope or cord.
    - Exclusion devices, which should be installed either (1) between approximately March 1 (or when evening temperatures are above 45°F and rainfall less than ½-inch in 24 hours occurs) and April 15, prior to parturition of pups; or (2) between September 1 and October 15 (or prior to evening temperatures dropping below 45°F and onset of rainfall greater than ½-inch in 24 hours). Specific exclusion devices may include one-way doors, lights and fans, foam or steel wool.
    - Tree trimming and/or removal guidance. Tree trimming and/or tree removal should be scheduled either (1) between approximately March 1 (or when evening temperatures are above 45°F and rainfall less than ½-inch in 24 hours occurs) and April 15, prior to parturition of pups; or (2) between September 1 and October 15 (or prior to evening temperatures dropping below 45°F and onset of rainfall greater than ½-inch in 24 hours). Additionally, trees should be removed in two steps over a period of two days. On the first day, all branches that do not contain roosting habitat shall be removed. The remaining portion of the tree should be removed on the second day. All branch removal will be conducted using chainsaws or similar handheld equipment.
- ~~If removal of trees and structures during the periods when bats are active is not feasible and active bat roosts being used for maternity or hibernation purposes are found on or in the immediate vicinity of the Project area where tree removal is planned, a no-disturbance buffer of 100 feet shall be established around these~~

~~roost sites until they are determined to be no longer active by the qualified biologist.~~

- ~~The qualified biologist shall be present during tree removal if active bat roosts, which are not being used for maternity or hibernation purposes, are present. Trees and structures with active roosts shall be removed only when no rain is occurring or is forecast to occur for three days and when daytime temperatures are at least 50°F.~~
- ~~Removal of trees with active or potentially active roost sites shall follow a two-step removal process:~~
  - ~~On the first day of tree removal and under supervision of the qualified biologist, branches and limbs not containing cavities or fissures in which bats could roost, shall be cut only using chainsaws.~~
  - ~~On the following day and under the supervision of the qualified biologist, the remainder of the tree may be removed, either using chainsaws or other equipment (e.g. excavator or backhoe).~~

Mitigation Measure BIO-9: Staging Areas and Access Routes.

When working on habitats that support state and/or federally listed species, disturbance to existing grades and vegetation will be limited to the actual site of the Proposed Project and necessary access routes. Placement of all roads, staging areas, and other facilities will avoid and limit disturbance-sensitive habitats (e.g., wetland habitat, suitable habitats) as much as possible. All staging and material storage areas, including the locations where equipment and vehicles are parked overnight, will be placed outside of the flood zone of a watercourse, away from wetland habitat, and away from any other sensitive habitats. When possible, staging and access areas will be situated in areas that are previously disturbed, such as developed areas, paved areas, parking lots, areas with bare ground or gravel, and areas clear of vegetation.

Mitigation Measure BIO-10: Fish Relocation Plan

WCWD should develop a Fish Relocation Plan to address potential impacts of dewatering and diversion on stranded aquatic species. To avoid impact to any non-listed aquatic species, the Aquatic Species Relocation Plan should be submitted to CDFW for approval at least 60 calendar days prior to the start of any in-water project activities. The Aquatic Species Relocation Plan should address the monitoring of the fish to be relocated during the dewatering process.

b) **Less-than-Significant Impact with Mitigation Incorporated.** Biological communities are assemblages of plant species that are defined by species composition and relative abundance. Special status biological communities, also referred to as sensitive natural communities, include waters, wetlands, riparian communities, and any natural community ranked S1, S2, or S3 by CDFW (CDFW 2022). A delineation of waters was completed for the proposed project and determined wetlands occur onsite. Sensitive natural communities onsite include riparian forest, forested wetland, and emergent wetlands. Thus, they are included in the discussion below. Based on 60 percent design, approximately 0.05 acres of aquatic resources, including riparian habitat, fresh emergent wetland, and open water, will be temporarily impacted and an additional 0.28 acres of

aquatic resources including open water will be permanently impacted by construction of the new structure. Construction and demolition of the Proposed Project could temporarily result in a significant impact to sensitive natural communities. However, with implementation of **Mitigation Measures BIO-2**, potential impacts would be avoided or reduced to less-than-significant levels.

c) **Less-than-Significant Impact with Mitigation Incorporated.** There are wetlands within the proposed project area that would likely qualify as jurisdictional under the Clean Water Act, Porter Cologne Act, or under Section 1600 of the CFGC. As described in the sections above, construction would temporarily and permanently impact wetlands and other waters by filling or hydrological interrupting those features as part of construction resulting in the potential for significant impacts. Therefore, the impact of construction of the FSG components within aquatic features protected under state or federal protections could be significant. However, implementing **Mitigation Measures BIO-1 and BIO-2** would ensure that avoidance of sensitive habitat areas and compensatory mitigation would occur. Implementation of these measures would reduce the extent of these impacts to a less-than-significant level.

d) **Less-than-Significant Impact with Mitigation Incorporated.** Little Butte Creek may act as a migratory corridor for giant garter snake, northwestern pond turtle, native fish, and other wildlife. Construction and demolition associated with the Proposed Project may temporarily interfere with the movement of these species during dewatering. However, the installation of the new facilities will be compensated by removing the existing facilities and will not further hinder wildlife movement more than the existing feature. Construction and demolition of the Proposed Project could temporarily result in a significant impact to these species if they utilize the Project area. However, with implementation of **Mitigation Measures BIO-1** through **BIO-5, and BIO-10** including pre-construction surveys, fencing, restoration, invasive vegetation removal, fish relocation, and WEAP training, potential impacts would be reduced to less-than-significant levels.

e) **No Impact.** The Proposed Project is not expected to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. As a result, no impact would occur.

f) **No Impact.** The Proposed Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan. Therefore, no impact would occur.

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3.5 Cultural Resources

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

This section examines the potential impacts of the Proposed Project on cultural resources. Tribal cultural resources are described separately in section 3.13 of this IS/MND. For purposes of this analysis, the term *cultural resource* is defined as follows:

> *Pre-contact and historic-era sites, structures, districts, and landscapes, or other evidence associated with human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or other reason. These resources include the following types of CEQA-defined resources: historical resources, archaeological resources, and human remains.*

CEQA Guidelines § 15064.5 requires the lead agency to consider the effects of a project on historical resources. An historical resource is defined as any building, structure, site, or object listed in or determined to be eligible for listing in the California Register of Historical Resources (California Register) or determined by a lead agency to be significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California.

This section relies on the information and findings presented in the Project's confidential cultural resources technical report: *Front Slide Gates Replacement Project, Butte County, California: Archaeological and Architectural Resources Inventory Report* (Hoffman and Cleveland, 2023). The report included an overview of the environmental, ethnographic, and historic background of the Proposed Project Area, with an emphasis on aspects related to human occupation. The confidential report is included by reference to this document. State law prohibits the public dissemination of locational and other information on known cultural resources.

This analysis describes archaeological resources, both as historical resources according to CEQA Guidelines § 15064.5, and as unique archaeological resources, as defined in PRC § 21083.2(g).

3.5.1 Environmental Setting

CEQA Area of Potential Effects

For purposes of this analysis, the CEQA Area of Potential Effects (C-APE) is defined as both the horizontal and vertical maximum extents of potential direct impacts of the Proposed Project on cultural resources. This area encompasses the footprint of Proposed Project actions, including staging and access areas. The C-APE comprises approximately 4.6 acres, and extends vertically to the maximum depth of the Proposed Project's ground-disturbing activities, varying according to specific location: staging—0.5 feet; clearing and grubbing—3.0 feet; structure foundation and cutoff walls—4.0 feet; temporary sheet pile wall—12.0 feet; embankment reconstruction and modification—3.0 feet; channel recontouring—2.0 feet; trenching, conduit or temporary water bypass pipeline —6.0 feet; and miscellaneous grading and finish earthwork—0.5 feet. Because of the nature of the Proposed Project and its minimal potential for indirect impacts, a single C-APE has been defined to account for impacts on archaeological and architectural resources. The same C-APE applies to human remains.

Records Search

In September 2023, ESA conducted a records search of the California Historical Resources Information System (CHRIS), at the Northeast Information Center (NEIC) at Chico State University, that included the C-APE with a 0.5-mile buffer. The NEIC maintains the CHRIS records relevant to the C-APE and vicinity.

The NEIC has no record of any previously recorded cultural resources mapped within the 0.5-mile search area but has record of two previous cultural resources studies that covered areas within 0.5 mile of the C-APE but not within the C-APE itself. Note, the California Department of Transportation (Caltrans) *Historic Bridge Inventory* provided by CHRIS does include a listing for the extant bridge in the C-APE, listed as Butte County bridge number 12C0403: Edgar Slough Overflow. The Caltrans inventory states the bridge's construction date as 1927 and also previously evaluated it as not eligible for listing in the National Register of Historic Places (National Register) but did not include any previous evaluation for eligibility for listing in the California Register.

Native American Correspondence

ESA contacted the California Native American Heritage Commission (NAHC) on July 18, 2023 in request of a search of the NAHC's Sacred Lands File (SLF) and a list of Native American representatives who may have interest in the Proposed Project. The NAHC replied on August 16, 2023, stating that the SLF has no record of any sacred sites in the C-APE, and also provided a list of nine representatives from four California Native American Tribes (Tribes) who may have interest in the Proposed Project.

Note, no Tribes have formally requested to be notified of WCWD projects, pursuant to PRC § 21080.3 (Assembly Bill 52); therefore, no Tribal consultation pursuant to PRC § 21080.3 was required for the Proposed Project.

Field Survey

On August 3, 2023, ESA conducted a cultural resources pedestrian surface survey of the C-APE. Intensive pedestrian methods were used during the survey for the portions of the C-APE with roads and open fields (eastern approximate one-quarter of C-APE); methods in these areas consisted of walking the ground surface in parallel transects no greater than 15 meters apart and inspecting the ground surface for evidence of cultural material (archaeological or architectural). Reconnaissance pedestrian methods were used for the remainder of the C-APE, which were covered in extremely dense vegetation with essentially no ground visibility; methods in these areas considered of inspecting areas visibly offering higher ground visibility (e.g., small bare patches) and areas where above-ground cultural resources (e.g., weir) were visible. Field methods were augmented for close inspection of the weir and bridge in the C-APE; these augmented methods entailed close inspection of these architectural resources with transect spacing of no greater than 5 meters. Inundated portions of the C-APE were not surveyed.

During the field survey, ESA did not identify any archaeological resources, but did identify two previously unrecorded architectural resources, consisting of a bridge (ESA-FSG-01) and the existing FSG structure (ESA-FSG-02), in the C-APE. These resources are discussed in detail below.

Summary of Resources Identified

Through background research, Native American correspondence, and a field survey conducted for the Proposed Project, two cultural resources, both architectural resources, were identified in the C-APE: a bridge (ESA-FSG-01; 12C0403: Edgar Slough Overflow) and the existing FSG structure (ESA-FSG-02). Caltrans previously evaluated 12C0403 (Edgar Slough Overflow bridge) as not eligible for the National Register, but the bridge was not previously evaluated for California Register-eligibility.

ESA (Hoffman and Cleveland, 2023) evaluated both cultural resources identified in the C-APE, recommending them both not eligible for the California Register. Therefore, neither appear to qualify as an historical resource, for CEQA purposes.

3.5.2 Discussion

Architectural resources that may qualify as historical resources, according to *CEQA Guidelines* § 15064.5 are addressed under impact discussion a, below, while archaeological resources, including archaeological resources that are potentially historical resources according to *CEQA Guidelines* § 15064.5, are addressed under impact discussion b.

a) **No Impact.** Two architectural resources 50 years of age or older were identified in the C-APE through background research and field surveys for the Proposed Project: Edgar Slough Overflow bridge, and the existing FSG structure. Both resources were evaluated as not eligible for the California Register and, therefore, do not qualify as historical resources, as defined in *CEQA Guidelines* § 15064.5. As a result, the Proposed Project is not anticipated to impact any historical resources and no mitigation is required.

b) **Less than Significant with Mitigation Incorporated.** No archaeological resources have been identified in the C-APE. Therefore, no known archaeological resources that may qualify as historical resources (as defined in *CEQA Guidelines* § 15064.5) or unique archaeological resources (as defined in PRC § 21083.2[g]) are present in the C-APE. As a result, there is no substantial evidence of the presence in the C-APE of any archaeological resources, as defined in *CEQA Guidelines* § 15064.5. Therefore, the Proposed Project is not expected to impact any archaeological resource, pursuant to *CEQA Guidelines* § 15064.5.

Although there is no substantial evidence that archaeological resources are present in the C-APE, the Proposed Project would involve ground-disturbing activities that may extend into undisturbed soil. Such activities could unearth, expose, or disturb subsurface archaeological resources that have not been identified on the surface. If such resources were found to qualify as archaeological resources, pursuant to *CEQA Guidelines* § 15064.5, impacts of the Proposed Project on archaeological resources would be potentially significant. Such potentially significant impacts would be reduced to less-than-significant by implementing **Mitigation Measures CUL-1** and **CUL-2**.

Mitigation Measures

Mitigation Measure CUL-1: Cultural Resources Awareness Training.

Before any ground-disturbing and/or construction activities, an archaeologist meeting, or under the supervision of an archaeologist meeting, the Secretary of the Interior's Professional Qualifications Standards (SOI PQS) for Archeology shall conduct a training program for all construction and field personnel involved in Project-related ground-disturbing activities. If a California Native American Tribe expresses interest, they shall be invited to participate in the training program. On-site personnel shall attend the training prior to commencement of any ground-disturbing activities. The training shall outline the general archaeological sensitivity of the Proposed Project Area and the procedures to follow in the event an archaeological resource and/or human remains are inadvertently discovered. Documentation of the training attendance shall be maintained by WCWD.

Mitigation Measure CUL-2: Implement Inadvertent Discovery Protocol for Archaeological Resources, including Potential Tribal Cultural Resources.

If pre-contact or historic-era archaeological resources are encountered by construction personnel during Proposed Project construction, all construction activities within 100 feet shall halt until a qualified archaeologist, defined as one meeting the SOI PQS for Archeology and with expertise in California archaeology, can assess the significance of the find. Pre-contact archaeological materials might include: obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (midden) containing fire-affected rock, artifacts, or shellfish remains; groundstone artifacts (e.g., mortars, pestles, handstones); and battered stone tools, such as hammer stones and pitted stones. Historic-era materials might include: stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. If the qualified archaeologist determines that the resource is or is potentially Native American in origin, culturally and geographically affiliated California Native American Tribes shall be contacted to assess the find and determine whether it is potentially a tribal cultural resource.

If WCWD determines, based on recommendations from the qualified archaeologist and California Native American Tribes that are traditionally and culturally affiliated with the Proposed Project Area (if the resource is indigenous), that the resource may qualify a historical resource (as defined in CCR § 15064.5), unique archaeological resource (as defined in PRC § 21083.2[g]), or tribal cultural resource (as defined in PRC § 21074), the resource shall be avoided, if feasible. Consistent with CCR § 15126.4(b)(3), this may be accomplished through: planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement. If avoidance of the resource is not feasible, WCWD shall continue to consult with California Native American Tribes that are traditionally and culturally affiliated with the Proposed Project Area (if the resource is indigenous) and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource pursuant to PRC § 21083.2 and CCR § 15126.4. This shall include documentation of the resource and may include data recovery (according to PRC § 21083.2), if deemed appropriate, or other actions such as treating the resource with culturally appropriate dignity and protecting the cultural character and integrity of the resource (according to PRC § 21084.3). Any technical report developed to document the implementation mitigation shall be submitted to CHRIS upon WCWD and approval, unless the document contains information that California Native American Tribes involved in the development of the mitigation deem should not be filed with CHRIS, in which case, the report shall be submitted to the NAHC.

If, during Proposed Project implementation, WCWD determines that portions of the Proposed Project Area may be sensitive for archaeological resources or tribal cultural resources, WCWD may authorize construction monitoring of these locations by an archaeologist and Tribal Monitor. Any monitoring by a Tribal Monitor shall be done under agreements between WCWD and culturally and geographically affiliated California Native American Tribes.

c) **Less than Significant.** No human remains have been identified in the C-APE through archival research, field surveys, or Native American outreach. Also, the land use designations for the C-APE do not include cemetery uses, and no known human remains exist within the C-APE. Therefore, the Proposed Project is not anticipated to disturb any human remains.

While unlikely, it is possible that human remains could be encountered during Proposed Project-related construction. If any such resources were encountered and were damaged or disturbed as a result of the Project, the impact would be potentially significant. This potential significant impact would be reduced to a less-than-significant level with compliance with PRC § 5097.98 and California Health and Safety Code § 7050.5, which identify steps to follow in the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, as well as establish reporting requirements associated with treatment of Native American skeletal remains, and establish penalties for noncompliance with these requirements.

3.5.3 References

Hoffman, Robin, and Katherine Cleveland. 2023. *Front Slide Gates Replacement Project, Butte County, California: Archaeological and Architectural Resources Inventory Report*. Prepared by Environmental Science Associates, Petaluma, CA. Prepared for the Western Canal Water District.

3.6 Energy

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

3.6.1 Environmental Setting

California Energy System

California's energy system includes electricity, natural gas, and petroleum. According to the California Energy Commission (CEC), California's energy system generated 77 percent of the electricity, 44 percent of the natural gas, and less than 1 percent of the petroleum consumed or used in the state. The rest of the state's energy is imported and includes electricity from the Pacific Northwest and the Southwest; natural gas purchases from Canada, Rocky Mountain states, and the southwest; and petroleum imported from Alaska and foreign sources (CEC 2022 2023).

Electricity

The production of electricity requires the consumption or conversion of energy resources including natural gas, coal, water, nuclear, and renewable sources such as wind, solar, and geothermal. Of the electricity generated in California, approximately 44 percent is generated by natural gas–fired power plants, 15 percent comes from large hydroelectric dams, 8 percent comes from nuclear power plants, and less than 1 percent is generated by coal-fired power plants. The remaining approximately 33 percent of in-state total electricity production is supplied by renewable sources including solar, biomass, geothermal, small hydro, and wind power (CEC 2023a).

Electricity is generated and then distributed via a network of high-voltage transmission lines commonly referred to as the power grid.

Transportation Fuels

Gasoline is by far the largest transportation fuel by volume used in California. Nearly all the gasoline used in California is obtained through the retail market. In 2023, approximately 13.5 billion gallons of gasoline were sold in California's retail market (CDTFA 2024a). Diesel fuel is the second largest transportation fuel by volume used in California behind gasoline. Approximately 53 percent of total diesel sales in California are associated with retail sales. In 2023, 3.0 billion gallons of diesel were sold in California (CDTFA 2024b). According to the U.S. Department of Energy's Energy Information Administration, nearly all semi-trucks, delivery

vehicles, buses, trains, ships, boats and barges, and farm, construction, and military vehicles and equipment have diesel engines.

Local and Regional Energy Use

PG&E is an investor-owned utility company that provides electricity supplies and services throughout a 70,000-square-mile service area that extends from Eureka in the north to Bakersfield in the south, and from the Pacific Ocean in the west to the Sierra Nevadas in the east. Shasta and Butte counties are within PG&E's service area for electricity. **Table 3.6-1** provides the operating characteristics of PG&E's electricity consumption by sector in the PG&E service area based on the latest available data from the CEC.

TABLE 3.6-1
ELECTRICITY CONSUMPTION IN THE PG&E SERVICE AREA (2022)

Agricultural and Water Pump	Commercial Building	Commercial Other	Industry	Mining and Construction	Residential	Streetlight	Total Usage
All Usage Expressed in Millions of kWh (GWh)							
6,638	26,928	4,055	10,091	1,814	27,209	280	77,886

NOTES: GWh = gigawatt-hours; kWh = kilowatt-hours
SOURCE: CEC 2024

In Butte County, approximately 1,444 million kWh of electricity were consumed in 2022, with approximately 715 million kWh consumed by nonresidential uses (CEC 2024).

PG&E delivers a range of clean energy resources, such as solar, wind, geothermal, biomass, and small hydroelectric. In 2023, PG&E delivered 33% percent of the electricity to customers from renewable resources that qualify under California's Renewable Portfolio Standards (RPS) program and is well positioned to meet the 60 percent target set forth by Senate Bill (SB) 100 by 2030 (PG&E 2024).

Project Site Existing Energy Use

The existing FSG structure spans Little Butte Creek just north of Nelson Road and impounds Creek flows and upstream inflows from the Thermalito Afterbay. Existing energy uses present at the site are associated with the operation of the existing FSG structure.

3.6.2 Discussion

Consistent with Public Resources Code Section 21100(b)(3), this impact analysis evaluates the potential for construction of the Proposed Project to result in a slight increase in energy demand and wasteful use of energy. The impact analysis is informed by Appendix G of the State CEQA Guidelines. The potential impacts are analyzed based on an evaluation of whether construction energy use estimates for the Proposed Project would be considered excessive, wasteful, or inefficient.

a) **Less than Significant.** During construction of the Proposed Project, fuel consumption would result from the use of construction tools and equipment, truck trips to haul material, and construction workers' commutes to and from the Proposed Project site. Construction of the Proposed Project is anticipated to last for 6 months.

Construction activities and corresponding fuel energy consumption would be temporary and localized, as the use of diesel fuel and heavy-duty equipment would not be a long-term condition of the Proposed Project. In addition, the Proposed Project has no unusual characteristics that would require using construction equipment or haul vehicles that would be less energy efficient than equipment and vehicles used at similar construction sites elsewhere in California. In conclusion, construction-related fuel consumption by the Proposed Project would not result in inefficient, wasteful, or unnecessary energy use compared with other construction sites in the region. This impact would be less than significant.

b) **Less than Significant.** The transportation sector, including light and heavy-duty trucks and other commercial vehicles and equipment used for construction, is a major end user of energy in California, accounting for approximately 34 percent of the state's total energy consumption in 2020 (U.S. Energy Information Administration 2023). Energy is also consumed in connection with construction and maintenance of transportation infrastructure, such as streets, highways, freeways, rail lines, and airport runways. In 2021, California's 30 million vehicles consumed more than 13.8 billion gallons of gasoline and more than 3.1 billion gallons of diesel, making California the second largest consumer of gasoline in the nation (CEC 2022).

Existing standards for transportation energy are promulgated through the regulation of fuel refineries and products, such as the Low Carbon Fuel Standard, which mandated a 10 percent reduction in the non-biogenic carbon content of vehicle fuels by 2020. In 2018, the Board approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 greenhouse gas (GHG) emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector. Other regulatory programs with emissions and fuel efficiency standards have been established by the U.S. Environmental Protection Agency and CARB, such as Pavley II/Low Emission Vehicle III from California's Advanced Clean Cars Program and the Heavy-Duty (Tractor-Trailer) Greenhouse Gas Regulation. CARB has set a goal for new vehicles to reach 100% zero-emission and clean plug-in hybrid-electric in California by the 2035 model year (CARB 2023). Further, construction sites need to comply with state requirements designed to minimize idling and associated emissions, which also minimizes fuel use. Specifically, idling of commercial vehicles and off-road equipment is limited to five minutes in accordance with the Commercial Motor Vehicle Idling Regulation and the Off-Road Regulation (California Code of Regulations Title 13, Section 2485).

Butte County has not implemented energy action plans. The Proposed Project is consistent with the state goals and would not impede progress toward achieving these goals.

The Proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency or impede progress toward achieving any goals and targets. This impact would be less than significant.

3.6.3 References

California Air Resources Board (CARB). 2023. *Zero-Emission Vehicle Program*. Available: https://ww2.arb.ca.gov/our-work/programs/zero-emission-vehicle-program/about. Accessed August 2, 2023.

California Energy Commission (CEC). 2022. California Gasoline Data, Facts, and Statistics. Available: https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-gasoline-data-facts-and-statistics.

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Pacific Gas and Electric Company (PG&E), 2022. Exploring Clean Energy Solutions. Available: https://www.pge.com/en_US/about-pge/environment/what-we-are-doing/clean-energy-solutions/clean-energy-solutions.page. Accessed July 1, 2022.

3.7 Geology and Soils

Would the project:	Significant or Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less than Significant	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

3.7.1 Environmental Setting

The Proposed Project site is located within the Great Valley Geomorphic province. The province includes the area known as the Great Central Valley of California, which extends approximately 400 miles north to south and 50 miles east to west. The Great Central Valley is encompassed by the Coast Ranges (metamorphic), the Klamath Ranges (metamorphic), the Cascade Range (volcanic), and the Sierra Nevada (granitic and metamorphic). The majority of rocks and deposits found within the province are sedimentary. According to the U.S. Geological Survey, sedimentary rocks are formed from preexisting rocks or pieces of once-living organisms. They form from

deposits that accumulate on the earth's surface. Sedimentary rocks often have distinctive layering or bedding.

Seismic hazards in Butte County are primarily related to faults, ground shaking, liquefaction, and seiches. Butte County has prepared an Earthquake Mitigation Action Plan as part of its LHMP, which is described further in Section VI of the Health and Safety Element in the Butte County General Plan. The Action Plan contains a description of earthquake-related hazards, a risk assessment, plans, and programs to address the hazards and mitigation goals and strategies for each jurisdiction in Butte County. The Cleveland Hills fault is the only fault in Butte County that has been identified as an active earthquake fault pursuant to the Alquist-Priolo Earthquake Fault Zones Act (Butte County 2023). The Proposed Project is over 23 miles to the west of the Cleveland Hills fault.

The soil on the Proposed Project site is composed of Dodgeland silty clay loam, 0 to 1 percent slopes (NRCS 2023). Dodgeland silty clay loam soils are poorly drained, very low runoff, and low to moderate erosion potential.

Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material, triggered by either static forces (i.e., gravity) or dynamic forces (i.e., earthquakes). Exposed rock slopes undergo rockfalls, rockslides, or rock avalanches, while soil slopes experience shallow soil slides, rapid debris flows, and deep-seated rotational slides. Based on the Landslide Potential map included in the Butte County General Plan, the Proposed Project and surrounding areas are in a "Low to None" potential for Landslide (Butte County 2023).

Liquefaction is the process in which the soil is transformed to a fluid form during intense and prolonged ground shaking. The areas most prone to liquefaction are those that are water saturated and consist of relatively uniform sands that are of loose to medium density. Liquefaction during an earthquake requires strong shaking and is not likely to occur in the County due to the relatively low occurrence of seismic activity in the area. Liquefaction is primarily associated with saturated, cohesion-less soil layers close to the ground surface. During liquefaction, soils lose strength and ground failure may occur. Mapping included in the Butte LHMP indicates that much of the west and southwestern part of the county has a moderate potential for liquefaction (Butte County 2019).

Expansive soils can undergo significant volume change (shrink and swell) as their soil moisture content varies. Soil moisture content can change as a result of many factors, including perched groundwater, landscape irrigation, rainfall, and utility leakage. The soils on the Proposed Project site have a moderate to high potential for expansive soils (Butte County 2023).

Subsidence occurs when a large land area settles as a result of oversaturation or extensive withdrawal of groundwater, oil, or natural gas. To date, no inelastic land subsidence has been recorded in Butte County. Subsidence remains a potential hazard, particularly if an extended drought or other condition were to necessitate large groundwater drawdowns. The Proposed Project is located within an area where subsidence is known to occur(Butte County 2023).

3.7.2 Discussion

a) **Less than Significant.** The Proposed Project site is not located along the trace of an active or potentially active fault or fault system. A review of Alquist-Priolo maps, as detailed in the Butte County General Plan, indicates no faulting zones in or adjacent to the Project area, with the nearest mapped active faults being located approximately 23 miles east of the Proposed Project site. The Proposed Project would not expose people to substantial adverse risks of loss, injury, or death since the Proposed Project does not include construction of habitable structures and is located in a remote location where there are no residents or habitable structures in the vicinity. Landslides would not be anticipated because there are no steep banks or slopes on or near the Proposed Project site. In addition, the Proposed Project would be subject to compliance with the California Building Code and American Society of Civil Engineers standards. The Proposed Project would not expose people or structures to substantial adverse effects, including the risk of loss and injury due to a seismic event. Therefore, this impact is less than significant.

b) **Less than Significant.** Soils in the Project area have low to moderate potential for erosion; however, earthmoving, excavation, filling and grading activities during construction of the Proposed Project have the potential to cause erosion. The new structure would contain a concrete foundation, catwalk, and several mechanically operated gates to regulate upstream reservoir water level and downstream flowrate. The Proposed Project would include demolition and removal of the existing structure and replacement with a new, similar structure oriented along the same approximate alignment, but with a larger footprint to accommodate the necessary civil works. Construction activities would be required to adhere to best management practices (BMPs) associated with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit for Discharges of Stormwater Associated with Construction Activities, also known as the Construction General Permit, to control sediment in stormwater runoff from the Project area (see checklist item a in Section 3.10, *Hydrology and Water Quality*). Therefore, impacts of Project construction related to soil erosion would be less than significant.

c) **Less than Significant.** As discussed previously, liquefaction is not likely to occur in the County due to the relatively low occurrence of seismic activity in the area. However, the soil at the Proposed Project site have the potential for liquefaction. Lateral spreading, often associated with liquefaction, is less likely because there are no steep banks or hard ground bordering the Proposed Project area. The Proposed Project would be subject to compliance with the California Building Code and American Society of Civil Engineers standards. In addition, no new buildings or habitable structures would be constructed as part of the Proposed Project. Therefore, this impact is less than significant.

d) **Less than Significant.** The soils on the Proposed Project site have a moderate to high shrink-swell potential. The Proposed Project is located in a remote location where there are no residents or habitable structures in the vicinity. No new buildings or habitable structures would be constructed as part of the proposed Project. In addition, the Proposed

Project would be subject to compliance with the California Building Code and American Society of Civil Engineers standards. Therefore, this impact is less than significant.

e) **No Impact.** The Proposed Project would not include the use of septic tanks or alternative wastewater disposal systems. Therefore, no impact would occur.

f) **Less than Significant with Mitigation Incorporated.** Paleontological resources are the fossilized evidence of past life found in the geologic record. Despite the tremendous volume of sedimentary rock deposits preserved worldwide, and the enormous number of organisms that have lived through time, the preservation of plant or animal remains as fossils is extremely rare. Because of the infrequency of fossil preservation, fossils—particularly vertebrate fossils—are considered nonrenewable resources. Because of their rarity and the scientific information they can provide, fossils are highly significant records of ancient life.

Rock formations that are considered paleontologically sensitive are those rock units that have yielded significant vertebrate or invertebrate fossil remains (SVP 2010). No previously recorded fossil sites have been identified on the Proposed Project site or within the surrounding area. The Butte County General Plan and the accompanying Environmental Impact Report do not indicate the Project area as being sensitive for paleontological resources. Therefore, it is unlikely that unique paleontological resources would be found in the Project area during future development of the Proposed Project. However, the discovery of fossils, and the subsequent opportunity for data collection and study, is a rare event that could occur from construction activities associated with the Proposed Project. While the probability of encountering fossils on the project site is low, if any previously unrecorded paleontological resources were encountered during Project construction and any were found to be a unique paleontological resource, any impact of the Proposed Project on the resource could be potentially significant. Any such potentially significant impacts would be reduced to a less-than-significant level by implementing **Mitigation Measure GEO-2**.

Mitigation Measures

Mitigation Measure GEO-2: Implement Appropriate Treatment Measures in Case of a Potential Fossil Discovery.

If construction or other Project personnel discover any potential fossils during construction, regardless of the depth of work or location, work at the discovery location shall cease within a 50-foot radius of the discovery until a qualified paleontologist has assessed the discovery and recommended the appropriate treatment. If the find is deemed significant, it shall be salvaged following the standards of the SVP (SVP 2010) and curated with a certified repository.

3.7.3 References

Butte County. 2040. Butte County General Plan. March 2023.

———. 2019 Local Hazard Mitigation Plan Update. October 2019

California Department of Conservation (CDC), 2016. Earthquake Zones Map. Available: https://maps.conservation.ca.gov/cgs/EQZApp/

California Department of Conservation (CDC), 2016. Geologic Map of California. Available: https://maps.conservation.ca.gov/cgs/gmc/

California Department of Conservation (CDC), 2016. Mines Online. Available: https://maps.conservation.ca.gov/mol/index.html

Natural Resources Conservation Service (NRCS). 2023. Web Soil Survey. Available: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed March 28, 2023.

Society of Vertebrate Paleontology (SVP). 2010. *Assessment and Mitigation of Adverse Impacts to Nonrenewable Paleontologic Resources: Standard Guidelines*. Society of Vertebrate Paleontology News Bulletin, 2010.

United States Geologic Survey (USGS). Mineral Resources Sata System. Available: https://mrdata.usgs.gov/mrds/map-graded.html#home

3.8 Greenhouse Gas Emissions

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

3.8.1 **Environmental** Setting

Climate Change

According to the U.S. Environmental Protection Agency (USEPA), the term "climate change" refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (over several decades or longer). There is a scientific consensus that climate change is occurring, and that human activity contributes in some measure (perhaps substantially) to that change. Gases that trap heat in the atmosphere are often called greenhouse gases (GHGs). Emissions of GHGs, if not sufficiently curtailed, are likely to contribute further to increases in global temperatures.

The potential effects of climate change in California include sea level rise and reductions in snowpack, as well as an increased number of extreme-heat days per year, high ozone days, large forest fires, and drought years (CARB, 2017). Globally, climate change could affect numerous environmental resources through potential, though uncertain, changes in future air temperatures and precipitation patterns. According to the International Panel on Climate Change (IPCC), the projected effects of climate change are likely to vary regionally, but are expected to include the following direct effects (IPCC, 2021):

- Higher maximum temperatures and more hot days over nearly all land areas;
- Higher minimum temperatures (fewer cold days and frost days over nearly all land areas);
- Reduced diurnal temperature range over most land areas;
- Increase in heat index over most land areas; and
- More intense precipitation events.

In addition, many secondary effects are projected to result from climate change, including a global rise in sea level, ocean acidification, impacts on agriculture, changes in disease vectors, and changes in habitat and biodiversity. The possible outcomes and feedback mechanisms involved are not fully understood, and much research remains to be done; however, over the long term, the potential exists for substantial environmental, social, and economic consequences.

Both natural processes and human activities emit GHGs. The accumulation of GHGs in the atmosphere regulates the Earth's temperature; however, emissions from human activities—such as fossil fuel–based electricity production and the use of motor vehicles—have elevated the concentration of GHGs in the atmosphere. This accumulation of GHGs has contributed to an increase in the temperature of the Earth's atmosphere and to global climate change.

Greenhouse Gas Emissions

GHG emissions that result from human activities primarily include carbon dioxide (CO2), with much smaller amounts of nitrous oxide (N2O); methane (CH4), often from unburned natural gas; sulfur hexafluoride (SF_6) from high-voltage power equipment; and hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs) from refrigeration/chiller equipment. These GHGs have different warming potentials (i.e., the amount of heat trapped in the atmosphere by a certain mass of the gas), and CO_2 is used as the reference gas for climate change. Therefore, GHG emissions are quantified and reported as CO_2-equivalent (CO_2e) emissions based on the reference gas. For example, while SF_6 represents a small fraction of the total annual GHGs emitted worldwide, this gas is very potent, with 23,900 times the global warming potential of CO_2. Therefore, an emission of 1 metric ton of SF_6 would be reported as 23,900 metric tons CO_2e. The global warming potentials of CH_4 and N_2O are 25 times and 298 times that of CO2, respectively (CARB, 2022a). The principal GHGs resulting from human activity that enter and accumulate in the atmosphere are described below.

Carbon Dioxide

CO_2 is a naturally occurring gas that enters the atmosphere through natural as well as anthropogenic (human) sources. Key anthropogenic sources include the burning of fossil fuels (e.g., oil, natural gas, and coal), solid waste, trees, wood products, and other biomass, as well as industrially relevant chemical reactions such as those associated with manufacturing cement. CO_2 is removed from the atmosphere when it is absorbed by plants as part of the biological carbon cycle.

Methane

Like CO_2, CH_4 is emitted from both natural and anthropogenic sources. Key anthropogenic sources of CH_4 include gaseous emissions from landfills, releases associated with mining and materials extraction industries (in particular coal mining), and fugitive releases associated with the extraction and transport of natural gas and crude oil. CH_4 emissions also result from livestock and agricultural practices. Small quantities of CH_4 are released during fossil fuel combustion.

Nitrous Oxide

N_2O is also emitted from both natural and anthropogenic sources. Important anthropogenic sources include industrial activities, agricultural activities (primarily the application of nitrogen fertilizer), the use of explosives, combustion of fossil fuels, and decay of solid waste.

Fluorinated Gases

HFCs, PFCs, and SF_6 are synthetic gases emitted from a variety of industrial processes, and they contribute substantially more to the greenhouse effect on a pound-for-pound basis than the GHGs described previously. Fluorinated gases are often used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). These gases are

typically emitted in small quantities, but because of their potency, they are sometimes referred to as "high global warming potential gases." Fluorinated gases in the form of SF_6 are used in electrical equipment such as circuit breakers that would be associated with the Project.

Greenhouse Gas Sources

Anthropogenic GHG emissions in the United States are derived mostly from the combustion of fossil fuels for transportation and power production. Energy-related CO_2 emissions resulting from fossil fuel exploration and use account for approximately three-quarters of the human-generated GHG emissions in the United States, primarily in the form of CO_2 emissions from burning fossil fuels. More than half of the energy-related emissions come from large stationary sources, such as power plants; approximately one-third derive from transportation sources; and a majority of the remaining sources are industrial processes, agriculture, commercial, and residential (USEPA, 2022a).

Statewide emissions of GHG from relevant source categories for 2013 through 2019 are summarized in **Table 3.8-1**. Specific contributions from individual air basins, such as the Sacramento Valley Air Basin (SVAB), which encompasses the Project sites, are included in the emissions inventory but not itemized by air basin. In 2022, California produced 371.1 million gross metric tons of CO_2e emissions. Transportation was the source of 37.7 percent of the state's GHG emissions, followed by industrial at 19.6 percent, electricity generation at 16.1 percent, and commercial and residential sources at 10.6 percent; and agriculture and forestry composed 8 percent (CARB, 2024).

TABLE 3.8-1
CALIFORNIA GREENHOUSE GAS EMISSIONS (MILLION METRIC TONS CO_2E)

Emission Inventory Category	2016	2017	2018	2019	2020	2021	2022	
Transportation	164.8	166.0	164.8	161.7	135.2	145.1	139.9	37%
Electric Power	70.8	64.4	65.0	60.2	59.5	62.3	59.8	16%
Industrial	81.3	81.7	82.3	80.9	73.6	74.2	72.7	20%
Commercial & Residential	37.7	38.3	37.5	40.6	39.0	38.8	39.5	11%
Agriculture and Forestry	32.1	31.6	32.0	31.2	31.4	30.4	29.8	8%
High GWP	19.5	20.1	20.6	20.8	21.3	21.3	21.3	6%
Recycling & Waste	7.9	8.2	8.2	8.3	8.5	8.3	8.2	2%
Total Gross Emissions	**414.07**	**410.28**	**410.46**	**403.66**	**368.45**	**380.45**	**371.13**	**100%**

NOTES:
The greenhouse gas percentages of the total gross emissions for year 2019 were rounded to the nearest whole number.
SOURCE: CARB, 2024.

3.8.2 Discussion

a) **Less than Significant.** During construction of the Proposed Project, the various diesel-powered vehicles and equipment in use on-site could generate GHG emissions. Construction-related emissions during development may be generated from construction equipment exhaust and construction employee vehicle trips to and from the worksite.

Project's construction emissions would occur over a short duration and consist primarily of equipment exhaust emissions. The Butte County Climate Action Plan (CAP) was adopted in February 2014 and updated in December 2021. The Butte County CAP includes strategies and associated actions related to public education and outreach efforts regarding reducing GHG emissions, administrative actions to monitor progress, and encouraging participation in programs. The strategies either apply to existing buildings that have already completed the environmental analysis, address operational characteristics of the County, or encourage options for actions that would reduce GHG emissions. The project is allowed in the AG-160 zone; thus, construction activities are consistent with the Butte County General Plan. Vehicles used during construction would conform to state regulations and plans regarding fuel efficiency. Therefore, the Proposed Project would not generate substantial GHG emissions, either directly or indirectly, significantly impacting the environment. Impacts are less than significant

b) **No Impact.** The Proposed Project would not conflict with an application plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. No mitigation is necessary or required.

3.8.3 References

California Air Resources Board (CARB), 2017. *California's 2017 Climate Change Scoping Plan*. November 2017. Available online at: https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf. Accessed July 2022.

CARB, 2022. *GHG Global Warming Potentials*. Available online at: https://ww2.arb.ca.gov/ghg-gwps. Accessed July 2022.

CARB, 2024. *California GHG Emissions Inventory for 2002-2022*. Available online at: https://ww2.arb.ca.gov/ghg-inventory-data. Accessed October 9, 2024.

Intergovernmental Panel on Climate Change (IPCC). 2017. Technical Summary. Available online: https://www.ipcc.ch/. Accessed October 9, 2024.

USEPA, 2022a. *Sources of Greenhouse Gas Emissions*. Last updated April 14, 2022. Available online: https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions. Accessed July 2022.

3.9 Hazards and Hazardous Materials

Would the project:	Significant or Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less than Significant	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) For a Project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands	☐	☐	☒	☐

3.9.1 Environmental Setting

The Proposed Project would be constructed and operated along the same approximate channel alignment with a slightly larger footprint, which is zoned agricultural. No schools are located within 1 mile of the Proposed Project site. The Proposed Project site is in an area with dispersed rural residences.

Hazardous Materials

Materials and waste may be considered hazardous if they are poisonous (toxic), can be ignited by open flame (ignitable), corrode other materials (corrosive), or react violently, explode, or generate vapors when mixed with water (reactive). The term *hazardous material* is defined in law as 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 (California Health and Safety Code, Section 25501[o]). In some cases, past uses can result in spills or leaks of hazardous materials to the ground, resulting in soil and groundwater contamination. The use, storage, transportation, and disposal of hazardous materials are subject to numerous federal, state, and local laws and regulations.

Information about hazardous materials sites on the Proposed Project site was collected by reviewing the California Environmental Protection Agency's Cortese List data resources and the State Water Resources Control Board's (SWRCB) GeoTracker list. The Cortese List data resources provide information regarding facilities or sites identified as meeting the requirements for inclusion on the Cortese List. The Cortese List is updated at least annually, in compliance with California regulations (California Government Code Section 65964.6[a][4]), and includes federal Superfund sites, state response sites, non-operating hazardous waste sites, voluntary cleanup sites, and school cleanup sites. The GeoTracker list shows underground storage tanks. Based on a review of the Cortese List conducted in August 2023, no listed sites are located within ½ mile of the proposed Project site (DTSC 2023).

Fire Suppression

The Proposed Project site is located within a Local Responsibility Area where Butte County is responsible for fire suppression. The site is also in an Unzoned Fire Hazard Severity Zone (CAL FIRE 2023).

a, b) **Less than Significant.** The Proposed Project's construction equipment and materials would include fuels, oils and lubricants, and concrete, which are all commonly used in construction. The routine use or an accidental spill of hazardous materials used in construction could result in inadvertent releases, which could adversely affect construction workers, the public, and the environment.

Proposed Project construction activities would be required to comply with numerous laws and regulations to ensure that construction-related fuels and other hazardous materials are transported, used, stored, and disposed of safely to protect worker safety, and to reduce the potential for such fuels or other hazardous materials to be released into the environment, including stormwater and downstream receiving water bodies.

The transportation of hazardous materials would be regulated by the U.S. Department of Transportation, the California Department of Transportation, and the California Highway Patrol. Together, federal and state agencies determine driver-training requirements, load-labeling procedures, and container specifications designed to minimize the risk of an accidental release.

The Proposed Project would be required to comply with the numerous laws and regulations discussed above that govern transportation, use, handling, and disposal of hazardous materials, which would limit the potential for creation of hazardous conditions due to the use or accidental release of hazardous materials. As a result, this impact would be less than significant.

c) **No Impact.** The Proposed Project is not located within a quarter-mile of an existing or proposed school and therefore would not emit hazardous emissions or handle hazardous or acutely hazardous material, substances, or waste within a quarter-mile of an existing or proposed school. Therefore, no impact on schools would occur.

d) **No Impact.** As discussed previously, based on a review of the Cortese List conducted in August 2023, the Proposed Project is not located on a site or within ½ mile of a site that is known to be included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, the Proposed Project would not create a significant hazard to the public or the environment. Therefore, no impact related to being located on a listed hazardous materials site would occur.

e, f) **No impact.** The Proposed Project is not located within two miles of a private or public airport and therefore would not impair operations of an airport or any other airport use. Therefore, no impact on airports would occur.

g) **No Impact.** The Proposed Project would be constructed and operated along the same approximate channel alignment with a slightly larger footprint, and the equipment would be staged on the top of bank on the east side of the canal. As such, the Proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, no impact on emergency response and evacuation plans would occur.

h) **Less than Significant.** The Proposed Project would be constructed and operated along the same approximate channel alignment with a slightly larger footprint, and the equipment would be staged on the top of bank on the east side of the canal. The Proposed Project site is located in a Local Responsibility Area and an Unzoned Fire Hazard Severity Zone (CAL FIRE 2023). The area surrounding the Proposed Project site is used for irrigated agriculture, reducing fire risk. The Proposed Project would not require the installation or maintenance of infrastructure that may exacerbate fire risks or that may result in temporary or ongoing impacts to the environment and is not located near urbanized areas or residences. Therefore, the impact related to wildland fires would be less than significant.

3.9.2 References

California Department of Forestry and Fire Protection (CAL FIRE). 2023. Fire Hazard Severity Zones in SRA, Butte County. June 2023.

California Department of Toxic Substances Control (DTSC). 2023. DTSC's Hazardous Waste and Substances Site List—Site Cleanup (Cortese List). Available: https://calepa.ca.gov/sitecleanup/corteselist/. Accessed August 2, 2023.

3.10 Hydrology and Water Quality

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

3.10.1 Environmental Setting

Surface Water Hydrology

Butte County lies entirely within the Sacramento River watershed, which includes the Feather River. Other notable regional hydrology features are Big Chico and Butte Creek in the western portion of the County and the Pine Creek in the northwestern side.

Similar to Mediterranean climates, Butte County's climate is generally characterized by hot, dry summers, with relatively moderate, wet winters. Precipitation rates are greatest during late fall to early spring followed by the dry season from later spring to early fall. In contrast to the limited

number of natural lakes in the county, there are numerous human-made impoundments, which store a portion of the county's abundant surface water supply, while also providing flood protection. Oroville Dam and reservoir on the Feather River is the second-largest water storage facility in California and is the initial and largest reservoir of the State Water Project. Water stored in Lake Oroville serves many users, both within the county and beyond, including users in southern California. In addition to Lake Oroville, other water storage facilities in Butte County include the Thermalito Afterbay, Thermalito Forebay, Paradise Reservoir, and Magalia Reservoir, as well as a number of other surface water storage reservoirs (Butte County 2023). The primary water source in the Sacramento River Hydrological Region, including Butte County, is surface water provided through surface storage reservoirs, which serve 69 percent of the County water needs (Butte County 2023).

Sacramento River

The Sacramento River is the largest river (in terms of volume of water and length) in the State and drains approximately 27,210 square miles of watershed, including Butte County. It forms a major portion of the western County boundary as it enters from Tehama County and extends south down into Colusa County.

Feather River

The Feather River forms a major portion of Butte County's eastern region. The City of Yuba City obtains a large portion of its annual water supplies for municipal and domestic use from the river. The majority of the surface water supply used by Butte County residents and businesses originates in the Feather River watershed, accumulates in Lake Oroville, and is primarily used for agriculture.

Butte Creek

Butte Creek originates within Butte County near the hills of Butte Meadows. It generally flows in a south-southwest direction until it meets the Sacramento River about four miles east from the city of Colusa.

Water Quality

Sacramento River

The Sacramento River supports various beneficial uses, including recreational, agricultural, and wildlife. Water quality in the Sacramento River is generally of good quality and is treated and used for municipal and industrial water supplies up and downstream of Sutter County. The SWRCB publishes updates to the Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins to improve water quality and maintain beneficial uses in the Sacramento and San Joaquin Rivers. The Basin Plan describes water quality concerns for the Sacramento River that includes agriculture, forestry, urban land uses, and stormwater runoff. Further, the Sacramento River is listed in the SWRCB's Total Maximum Daily Load (TMDL) program for DDT (Dichlorodiphenyltrichloroethane), dieldrin, mercury, dissolved oxygen, PCBs (Polychlorinated biphenyls), and unknown toxicity (State Water Board 2022).

Feather River

Like the Sacramento River, the Feather River provides beneficial uses, including recreational, agricultural, and wildlife. Water quality in the Feather River is generally good, but is listed in the SWRCB's TMDL program for aluminum, chlorpyrifos, group A pesticides, mercury, dissolved oxygen, PCBs (Polychlorinated biphenyls), and unknown toxicity (State Water Board 2022).

Butte Creek

Although smaller than the Sacramento and Feather Rivers, the Butte Creek also provides beneficial uses that include recreational, agricultural, and wildlife. Water quality in the Butte Creek is generally good, but is listed in the SWRCB's TMDL program for mercury (State Water Board 2022).

Groundwater Hydrology and Water Quality

The Proposed Project site is located within the Sacramento Valley Groundwater Basin and the East Butte Subbasin (DWR 2004).

The California Department of Water Resources (DWR) described the characteristics of the Butte Subbasin in *California's Groundwater,* Bulletin 118: Sacramento Valley Groundwater Basin, East Butte Subbasin (DWR 2004):

> *The East Butte Subbasin (Basin Number 5-21.59) has a total surface area 265,390 acres (415 square miles The East Butte Subbasin is the portion of the Sacramento Valley Groundwater Basin bounded on the west and northwest by Butte Creek, on the northeast by the Cascade Ranges, on the southeast by the Feather River and the south by the Sutter Buttes. The subbasin lies entirely within the Sacramento River watershed with the most notable hydrological features being the Sacramento and Feather Rivers as well as Butte Creek. Other notable features are the Modesto, Tuscan, and Laguna Formations.*
>
> *The geologic formations of the Butte aquifer system include deposits of late Tertiary to Quaternary age. The Quaternary deposits include Holocene stream channel deposits and basin deposits, Pleistocene deposits of the Modesto and Riverbank formations, and Sutter Buttes alluvium. The Tertiary deposits include the Tuscan and Laguna formations. These deposits consist of unconsolidated gravel, sand, silt and clay derived from the erosion, reworking, and deposition from adjacent alluvial deposits, Cascade Range portions, Sutter Buttes, and geological formations.*
>
> *DWR maintains data for 43 water quality wells in the East Butte Subbasin. Data collected from these wells indicate a TDS range of 122- to 570-mg/L. The primary groundwater chemistry in the subbasin is calcium, magnesium, iron, manganese, sodium, and bicarbonate, which may occur in any combination. Groundwater containing calcium-magnesium bicarbonate or magnesium-calcium bicarbonate can be found in the southeastern portion of the subbasin. Recent groundwater quality data collected indicates some wells drilled to various depths contain chemical elements and compounds in amounts that exceed drinking water quality safety and aesthetic standards.*

Groundwater levels have wide seasonal fluctuations in groundwater levels in the East Butte Subbasin. Annual groundwater fluctuations in the confined and semi-confined aquifer system ranges from 15- to 30- feet during normal years. Measured Groundwater depth at the Proposed Project site is approximately 10 feet below the existing ground surface (DWR 2023).

Flood Control and Flood Management Facilities

The County is susceptible to four types of floods: levee failure/overtopping, localized flooding, riverine (slow rise) flooding, and dam failure inundation.

Major storm events can produce high flows throughout the Sacramento, Feather, and Butte water systems. The primary method of flood protection provided in the County is via a system of levees or earthen embankments along the Sacramento and Feather rivers that contain high river flows within these constructed channels. When the capacity of the river levee system is exceeded, the bypass system accommodates the additional flows to take the load off the primary levee system during critical peak flow periods.

The agencies with responsibility for flood protection in Butte County include the US Army Corps of Engineers, DWR, Central Valley Flood Protection Board, and Butte County Service Area 24. The Army Corps of Engineers is responsible for federal levees and canals such as the Mud Creek earthen levees, Little Chico-Butte Creek and Butte Creek earthen diversions, the Cherokee Canal, and the Feather River earthen levees. DWR is responsible for maintaining the channels on Chico and Mud Creeks and for operating and maintaining levee facilities on Butte Creek, Cherokee Canal, Big Chico Creek as it runs through Chico, Little Chico Creek Diversion to Butte Creek, and the Sacramento River. The Central Valley Flood Protection Board is a permitting agency for development or encroachments within the 200-year floodplain of the Sacramento River. The Butte County Service Area 24 is responsible for the project levees on Chico Creek and Mud Creek and for the Sandy Gulch (Sycamore to Mud Creek) Flood Control Project.

The Proposed Project is within an area designated as Zone A. Special Flood Zone Hazards, labeled Zone A, Zone AE, Zone AO, or Zone AH (shaded) are the areas between the limits of the base flood and the 1-percent-annual-chance (or 100-year) flood.

3.10.2 Discussion

a) **Less than Significant.** As described previously, soils in the Project area have low potential for erosion; however, earthmoving and grading activities during construction have the potential to cause erosion.

WCWD would be required to obtain a National Pollutant Discharge Elimination System (NPDES) Construction General Permit for Discharges of Stormwater Associated with Construction Activities (Construction General Permit) from the Central Valley Regional Water Quality Control Board before initiating ground-disturbing activities. Among the permit's conditions would be preparation and implementation of a storm water pollution prevention plan (SWPPP) that would identify and require implementation of best management practices (BMPs) to prevent sediment and other construction-related

compounds (e.g., fuel, oil) from entering stormwater runoff. Compliance with the NPDES Construction General Permit, including the implementation of BMPs described in the SWPPP, would ensure that the proposed Project would avoid and/or minimize the potential impact of soil erosion or the loss of topsoil during construction. Therefore, this impact would be less than significant.

b) **Less than Significant.** Construction of the Proposed Project would include installation of a cofferdam upstream of the structure before the start of the irrigation season. The contractor would be responsible for selecting the appropriate range of groundwater levels and equipment for the dewatering system used during construction, based on site conditions. Dewatering will be accomplished with drainage pumps moving any residual or seepage water from the construction area to adjacent ground on the land side of the embankment road or into the existing irrigation channel upstream of the cofferdam in accordance with regulatory permits. Management of dewatering activities in accordance with the General Order for Dewatering and Other Low Threat Discharges to Surface Waters Permit would minimize the risk of impacting the water quality of receiving waters. Therefore, this impact is considered less-than-significant.

ci-civ) **Less than Significant.** The Proposed Project would improve water reliability and efficiency by installing a concrete foundation, catwalk, and several mechanically operated gates to regulate upstream reservoir water level and downstream flowrate. The front slide gate would not result in erosion and siltation. The Proposed Project would not increase the amount of water in the canal system but would improve irrigation and flood control. Therefore, this impact would be less than significant.

d) **Less than Significant.** The Proposed Project site is located within a 100-year flood zone. During construction, the Proposed Project would be required to comply with the numerous laws and regulations discussed above that govern transportation, use, handling, and disposal of hazardous materials, which would limit the potential for the release of pollutants due to project inundation. The Proposed Project site is not located near the ocean, and as such would not be susceptible to inundation from a tsunami. The Proposed Project site is not located near a large, enclosed body of water and as such would not be susceptible to inundation from a seiche. Therefore, this impact would be less than significant.

e) **Less than Significant.** As described previously under checklist items a) and b), the Proposed Project would comply with the NPDES Construction General Permit, including the implementation of BMPs described in the SWPPP to prevent water quality pollutants such as silt, sediment, hazardous materials, and construction-related fluids from entering receiving waters. Management of dewatering activities in accordance with the General Order for Dewatering and Other Low Threat Discharges to Surface Waters Permit would minimize the risk of impacting the water quality of receiving waters. Implementing the Proposed Project would not result in the addition of impervious surfaces or draw down groundwater resources resulting from the construction of the Proposed Project. Therefore, this impact would be less than significant.

3.10.3 References

California Department of Water Resources (DWR). 2006. California's Groundwater Bulletin 118, Sacramento Valley Groundwater Basin, East Butte Subbasin. February 2004.

———. 2023. Sustainable Groundwater Management Act (SGMA) Data Viewer. Available: https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#gwlevels. Accessed August 21, 2023.

State Water Board. 2022. Web Map Application for the 2020-2022 California Integrated Report. Available at: https://gispublic.waterboards.ca.gov/portal/home/item.html?id=6cca2a3a1815465599201266373cbb7b July 2022. Accessed August 21, 2023.

3.11 Noise

Would the project result in:	Significant or Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less than Significant	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
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?	☐	☐	☐	☒

3.11.1 Environmental Setting

Sound is mechanical energy transmitted by pressure waves through a medium such as air, while noise is defined as unwanted sound. Sound pressure level is measured in decibels (dB), with 0 dB corresponding roughly to the threshold of human hearing and 120–140 dB corresponding to the threshold of pain.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, during assessments of potential noise impacts, sound is measured using an electronic filter that deemphasizes the frequencies below 1,000 Hertz[4] and above 5,000 Hertz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies instead of the frequency mid-range. This method of frequency weighting is referred to as *A-weighting* and is expressed in units of A-weighted decibels (dBA).[5]

Effects of Noise on People

The effects of noise on people fall into three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction.
- Interference with activities such as speech, sleep, and learning.
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants generally experience noise in the last category. There is no completely satisfactory way to

4 Hertz is a unit of frequency equivalent to one cycle per second.

5 All noise levels reported herein reflect A-weighted decibels unless otherwise stated.

measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation exists in individual thresholds of annoyance; different tolerances to noise tend to develop based on individuals' past experiences with noise.

Thus, an important way to predict a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise levels, the following relationships occur:

- In carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived.
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference when the change in noise is perceived but does not cause a human response.
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected.
- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause adverse response.

The human ear perceives sound in a nonlinear fashion; hence, the decibel scale was developed. Because the decibel scale is nonlinear, two noise sources do not combine in a simple additive fashion, rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

Noise Attenuation

Stationary "point" sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate of 6 to 7.5 dBA per doubling of distance from the source, depending on environmental conditions (e.g., atmospheric conditions and noise barriers, either vegetative or manufactured). Widely distributed noises, such as a large industrial facility spread over many acres or a street with moving vehicles (a "line" source), would typically attenuate at a lower rate, approximately 3 to 4.5 dBA per doubling of distance from the source (also depending on environmental conditions) (Caltrans 2013). Noise from large construction sites would have characteristics of both point and line sources, so attenuation would generally range between 4.5 and 7.5 dBA per doubling of distance.

Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Several different methods are used to quantify vibration (FTA 2018):

- *Peak particle velocity* (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings.
- The *root mean square* (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal.

- Decibel notation, expressed as *vibration decibels* (VdB), is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration.

Typically, groundborne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration.

Existing Ambient Noise Environment

The noise environment in the area surrounding the Proposed Project site is characterized by rural roadways, rural agricultural noise, and scattered residences. It includes low-volume traffic noise from tractors, large trucks, and other farm equipment, and both on- and off-road passenger vehicles. The ambient noise environment in the vicinity of the Proposed Project site was estimated using a relationship between population density and ambient noise that was determined during a research program by the U.S. Environmental Protection Agency. The agency estimated that residents of rural or other non-urban areas are exposed to outdoor ambient noise levels ranging from 35 to 50 dBA L_{dn}[6] (EPA 1974). Because the area surrounding the Proposed Project site can be categorized as a rural or other non-urban area, it is assumed that ambient noise levels would range between 35 and 50 dBA L_{dn}.

Sensitive Receptors

Human response to noise varies considerably from one individual to another. Effects of noise at various levels can include interference with sleep, concentration, and communication; physiological and psychological stress; and hearing loss. Given these effects, some land uses are considered more sensitive to ambient noise levels than others. In general, residences, schools, hotels, hospitals, and nursing homes are considered to be the most sensitive to noise. Commercial and industrial uses are considered the least noise-sensitive. Sensitive receptor land uses in the vicinity of the Proposed Project site include residences; the closest sensitive receptor is a residence located approximately 1.1 miles east of the site.

3.11.2 Discussion

a) **Less than Significant.** For the assessment of temporary construction noise impacts, construction activities that would occur outside of Butte County's construction-exempt hours would result in a significant impact. Article 41A-7 of the Butte County Code of Ordinances limits exterior noise in non-urban areas to 60 dBA at any receiving property line between 7 a.m. and 7 p.m., 55 dBA between 7p.m. and 10p.m and 50 dBA between 10p.m. and 7a.m.

Exceptions to the noise standards include construction for noise sources with construction, repair, remodeling, demolition, paving or grading of any real property or public works project located within 1,000 feet of noise-sensitive uses (i.e., residential uses, daycares,

[6] Also abbreviated "DNL," L_{dn} is a 24-hour day and night A-weighted noise exposure level that accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10 p.m. and 7 a.m. is weighted (penalized) by adding 10 dB to take into account the greater annoyance of nighttime noises.

schools, convalescent homes, and medical care facilities), provided such activities take place between:

1. Sunset to sunrise on weekdays and non-holidays;
2. Friday commencing at 6:00 p.m. through and including 8:00 a.m. on Saturday, as well as not before 8:00 a.m. on holidays;
3. Saturday commencing at 6:00 p.m. through and including 10:00 a.m. on Sunday; and,
4. Sunday after the hour of 6:00 p.m.

Compliance with this code requirement would limit the Proposed Project's construction noise to a level determined to be acceptable by Butte County. Construction work is expected to take place within daylight hours Monday through Friday.

On-site construction activities would occur in accordance with Butte County's noise requirements as the nearest sensitive receptor is over 1.0 miles away and construction noise would not exceed the threshold at any receiving property line. No nighttime hours as defined by the Butte County Code would occur, and the activities would be limited in duration. This impact would be less than significant.

Additionally, the Proposed Project site is located in a rural area adjacent to land that is in agricultural use. In the vicinity of the Proposed Project site, low-volume traffic noise from tractors, large trucks, and other farm equipment, and from both on- and off-road passenger vehicles, is normal. Therefore, the Proposed Project is not expected to result in any permanent substantial noise increases relative to existing conditions, nor would noise levels generated by Proposed Project activities exceed Butte County's exterior noise standards at the nearest sensitive receptor. Therefore, this impact would be less than significant.

b) **Less than Significant.** For adverse human reaction, the analysis applies the "strongly perceptible" threshold of 0.9 inch per second (in/sec) PPV for transient sources. For risk of architectural damage to historic buildings and structures, the analysis applies a threshold of 0.12 in/sec PPV (Caltrans 2013). A threshold of 0.3 in/sec PPV is used to assess damage risk for all other buildings. There are no historic structures in the vicinity of the Proposed Project site that could be adversely affected by vibration related to Proposed Project construction.

Construction of the Proposed Project would involve the use of excavators, road graders/blades, sheepsfoot compactors, smooth drum rollers, water trucks, bulldozers, backhoes, dump trucks, loaders, concrete trucks, concrete pumping equipment, and cranes. The use of bulldozers would be expected to generate the highest vibration levels during construction. Vibration levels of bulldozers are typically 0.089 in/sec PPV at 25 feet, which is typical for a wide range of soils. Under typical propagation conditions, vibration levels at 175 feet would be approximately 0.0048 in/sec PPV, which is well below the Federal Transit Administration's threshold of 0.20 in/sec PPV for building

damage and 72 VdB for human annoyance. Therefore, this impact would be less than significant.

c) **No Impact.** The Proposed Project is not located within two-miles of any public or private airports. Therefore, the Proposed Project would not expose people working in the Project area to excessive noise levels.

3.11.3 References

California Department of Transportation (Caltrans). 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*. September 2013.

Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment Manual.* September 2018.

U.S. Environmental Protection Agency (EPA). 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. March, 1974.

3.12 Traffic and Transportation

Would the project:	Significant or Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less than Significant	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☒	☐

3.12.1 Environmental Setting

Highways

The Proposed Project site is located approximately 0.77 miles north of Highway 48.

County Roadways/Traffic Types

As described previously, the Proposed Project site is located in a rural area. On the southeast side of the channel is Nelson Road, a dirt road. On the west side of the channel is 7 Mile Road, a paved road. 7 Mile Road is a two-lane rural roadway that extends from Highway 48 in a northward direction bordering the community of Rancho Llano Seco, terminating at the intersection of Ord Ferry Road near Dayton.

Airports

The nearest airport to the Proposed Project site is the Richvale Airport, approximately 7.98 miles to the southeast.

3.12.2 Discussion

a) **Less than Significant.** Construction of the Proposed Project would temporarily generate increases in vehicle trips by workers and vehicles on area roadways. There could be a minimal increase in truck trips for construction; however, given the scale of the Proposed Project and the length of the construction period, the capacity of local roads used to access the Proposed Project site would not likely be substantially reduced. Because the increase in traffic during construction would be minimal, there would be no decreased levels of service. Therefore, this impact would be less than significant.

b) **Less than Significant.** Section 15064.3 of the State CEQA Guidelines establishes specific considerations for evaluating a project's transportation impacts. The State CEQA Guidelines identify vehicle miles traveled (VMT)—the amount and distance of automobile travel attributable to a project—as the most appropriate measure of transportation impacts. Other relevant considerations may include the effects of the project on transit and nonmotorized travel. Construction of the Proposed Project would last approximately 6 months and would use existing construction crews. Therefore, this impact would be less than significant.

c) **Less than Significant.** Trucks accessing the Proposed Project site would use local rural roadways. Based on the low number of anticipated construction trips relative to traffic volumes on local roadways and their limited duration, this impact of Proposed Project construction would be less than significant.

Construction of the Proposed Project would not result in new design features on roads in the area. Further, the Proposed Project would not result in in potential traffic safety hazards for vehicles, bicyclists, and pedestrians on public roadways, given the intermittent and temporary nature of construction activities. Therefore, this impact would be less than significant.

d) **Less than Significant.** Temporary construction staging would not block or interfere with emergency response vehicles as the equipment would be staged on the top of bank on the northeast side of the channel. Increases in traffic volumes on local roadways providing access to the Proposed Project site could cause intermittent and temporary slowdowns in traffic flow during construction, but Nelson Road is lightly traveled and not an emergency access route. For these reasons, the Proposed Project would not result in inadequate emergency access, and this impact would be less than significant.

3.13 Tribal Cultural Resources

Would the project:	Significant or Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less than Significant	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)? 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.	☐	☒	☐	☐

This section examines the potential impacts of the Proposed Project on tribal cultural resources. Cultural resources are described separately section 3.5 of this IS/MND. A tribal cultural resource is defined in PRC § 21074 as a site, feature, place, or 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 listed or eligible for the California Register of Historical Resources or a resource determined significant by the lead agency.

PRC § 21080.3.1, 21080.3.2, and 21082.3 require lead agencies to engage in tribal consultation with California Native American Tribes, and PRC § 20174 and 21083.09 require lead agencies to analyze project impacts on tribal cultural resources separately from archaeological resources.

This section relies on the information and findings presented in the Project's confidential cultural resources technical report: *Front Slide Gates Replacement Project, Butte County, California: Archaeological and Architectural Resources Inventory Report* (Hoffman and Cleveland, 2023). The report included an overview of the environmental, ethnographic, and historic background of the Proposed Project Area, with an emphasis on aspects related to human occupation. The confidential report is included by reference to this document. State law prohibits the public dissemination of locational and other information on known cultural resources.

3.13.1 Environmental Setting

Records Search

In September 2023, ESA conducted a records search of the California Historical Resources Information System (CHRIS), at the Northeast Information Center (NEIC) at Chico State University, that included the Proposed Project Area with a 0.5-mile buffer. The NEIC maintains the CHRIS records relevant to the Proposed Project Area and vicinity.

The NEIC has no record of any previously recorded cultural resources mapped within the 0.5-mile search area but has record of two previous cultural resources studies that covered areas within 0.5 mile of the Proposed Project Area but not within the Proposed Project Area itself. Note, the California Department of Transportation *Historic Bridge Inventory* provided by CHRIS does include a listing for the extant bridge in the Proposed Project Area, listed as Butte County bridge number 12C0403: Edgar Slough Overflow.

Native American Correspondence

ESA contacted the California Native American Heritage Commission (NAHC) on July 18, 2023 in request of a search of the NAHC's Sacred Lands File (SLF) and a list of Native American representatives who may have interest in the Proposed Project. The NAHC replied on August 16, 2023, stating that the SLF has no record of any sacred sites in the Proposed Project Area, and also provided a list of nine representatives from four California Native American Tribes (Tribes) who may have interest in the Proposed Project.

Note, no Tribes have formally requested to be notified of WCWD projects, pursuant to PRC § 21080.3 (Assembly Bill 52); therefore, no Tribal consultation pursuant to PRC § 21080.3 was required for the Proposed Project.

Field Survey

On August 3, 2023, ESA conducted a cultural resources pedestrian surface survey of the Proposed Project Area. Intensive pedestrian methods were used during the survey for the portions of the Proposed Project Area with roads and open fields (eastern approximate one-quarter of Proposed Project Area); methods in these areas consisted of walking the ground surface in parallel transects no greater than 15 meters apart and inspecting the ground surface for evidence of cultural material (archaeological or architectural). Reconnaissance pedestrian methods were used for the remainder of the Proposed Project Area, which were covered in extremely dense vegetation with essentially no ground visibility; methods in these areas considered of inspecting areas visibly offering higher ground visibility (e.g., small bare patches) and areas where above-ground cultural resources (e.g., weir) were visible. Field methods were augmented for close inspection of the weir and bridge in the Proposed Project Area; these augmented methods entailed close inspection of these architectural resources with transect spacing of no greater than 5 meters. Inundated portions of the Proposed Project Area were not surveyed.

During the field survey, ESA did not identify any archaeological resources in the Proposed Project Area.

Summary of Resources Identified

Through background research, Native American correspondence, and a field survey conducted for the Proposed Project, no tribal cultural resources, or archaeological resources that could be tribal cultural resources were identified in the Proposed Project Area.

3.13.2 Discussion

a.i, a.ii) **Less than Significant with Mitigation Incorporated.** No tribal cultural resources, as defined in PRC § 21074, have been identified in the Proposed Project Area through archival research, field survey, or Native American outreach. Therefore, the Proposed Project is not anticipated to impact any tribal cultural resources.

However, because the Proposed Project would involve ground-disturbing activities that may extend into undisturbed soil, it is possible that such actions could unearth, expose, or disturb subsurface archaeological resources that were not identified on the surface. If previously unrecorded archaeological deposits are present in the Proposed Project Area, and if they are found to qualify as tribal cultural resources, pursuant to PRC § 21074, any impacts of the Proposed Project on the resources would be potentially significant. Such potentially significant impacts would be reduced to a less-than-significant level by implementing **Mitigation Measures CUL-1** and **CUL-2**, as described in Section 3.5.

3.13.3 References

Hoffman, Robin, and Katherine Cleveland. 2023. *Front Slide Gates Replacement Project, Butte County, California: Archaeological and Architectural Resources Inventory Report*. Prepared by Environmental Science Associates, Petaluma, CA. Prepared for the Western Canal Water District.

3.14 Mandatory Findings of Significance

Pursuant to Section 15065 of the State EIR Guidelines, a project shall be found to have a significant effect on the environment if any of the following are true:

Would the Proposed Project:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

3.14.1 Discussion

a) **Less than Significant Impact with Mitigation Incorporated.** As described in the preceding impact discussions, the impacts related to the potential of the Proposed Project to substantially degrade the environment would be less than significant with incorporated mitigation measures. As described in this initial study, the Proposed Project has the potential for impacts related to air quality, biological resources, cultural resources, geology and soils, and tribal cultural resources. However, these impacts would be avoided or reduced to a less-than-significant level with the incorporation of avoidance and mitigation measures discussed in each section.

b) **Less than Significant with Mitigation Incorporated.** This section provides a description of other actions in the area and a discussion of the cumulative impacts of those projects, in combination with the previously identified effects of the Proposed Project. State CEQA Guidelines Section 15355 states that "cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts":

(a) The individual effects may be changes resulting from a single project or a number of separate projects.

(b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

The past, present, and reasonably foreseeable future conditions of the Proposed Project site and vicinity were considered for the cumulative analysis.

Aesthetics. Completion of the Proposed Project would result in a similar structure as the existing FSG structure. The new FSG structure would include minimal aesthetic differences by installing a concrete foundation, catwalk, and several mechanically operated gates to regulate upstream reservoir water level and downstream flowrate. The Proposed Project would be consistent with the rural agricultural nature of the existing setting. Therefore, cumulative impacts on aesthetics would be less than significant.

Agriculture and Forestry Resources. The Proposed Project would have no impact on agriculture and forestry resources; therefore, it would not contribute to cumulative agriculture and forestry resources issues.

Air Quality and Greenhouse Gas Emissions. A number of individual projects in the vicinity of the Proposed Project may be under construction simultaneously with the Proposed Project. Depending on construction schedules and actual implementation of projects in and around Butte County, generation of fugitive dust and pollutant emissions during construction may result in short-term air pollutants, which would contribute to short-term cumulative impacts on air quality. However, each individual project would be subject to BCAQMD rules, regulations, and other mitigation requirements during construction. For cumulative impacts on air quality and greenhouse gas emissions, see Section 3.2, *Air Quality*, and Section 3.7, *Greenhouse Gas Emissions*. The thresholds used consider the contributions of other projects in the air basin. Additionally, greenhouse gas emissions are considered cumulative in nature because it is unlikely that a single project would contribute significantly to climate change.

Biological Resources, Cultural Resources, Tribal Cultural Resources, Geology and Soils, and Hazards and Hazardous Materials. The Proposed Project's impacts for these environmental issues would be limited to the Proposed Project site, and any significant impacts would be reduced to a less-than-significant level by implementing proposed mitigation measures. Thus, the Proposed Project would not contribute to cumulative impacts for these topics.

Energy. Construction of the Proposed Project would result in fuel consumption from the use of construction tools and equipment, truck trips to haul materials, and vehicle trips by construction workers commuting to and from the Proposed Project site. This impact would be temporary and localized. Construction-related fuel consumption by the

Proposed Project would not result in inefficient, wasteful, or unnecessary energy use compared with other construction sites in the region.

Hydrology and Water Quality. Implementing the Proposed Project would result in the use of heavy equipment during activities such as earthmoving, excavation, filling and grading. Even though soil erosion potential on the Proposed Project site is low to moderate, construction activities have the potential to increase rates of erosion, which could increase turbidity in downstream receiving waters. In addition, the use of heavy machinery during construction would have the potential to result in an accidental release of fuels, oils, solvents, hydraulic fluid, and other construction-related fluids to the environment, thereby degrading water quality. Construction contractors would be required to acquire coverage under the National Pollutant Discharge Elimination System General Stormwater Permit, which requires the preparation and implementation of a storm water pollution prevention plan (SWPPP) for construction activities for projects with over 1 acre of ground disturbance. The SWPPP would list the hazardous materials (including petroleum products) proposed for use during construction; describe spill prevention measures, equipment inspections, and equipment and fuel storage; describe protocols for responding immediately to spills; and describe best management practices for controlling site run-on and runoff. Therefore, cumulative impacts would be less than significant.

Land Use and Land Use Planning. The Proposed Project would have no impact on land use and land use planning; therefore, it would not contribute to cumulative land use issues.

Mineral Resources. The Proposed Project would have no impact on mineral resources and thus would not contribute to cumulative impacts.

Noise. The proposed Project's noise impacts are anticipated to be minor and the Proposed Project would comply with the noise standards in the Noise Element of the Butte County General Plan and Butte County Code of Ordinances. Thus, cumulative noise impacts would be less than significant.

Population and Housing. The Proposed Project would have no impact on population and housing resources and thus would not contribute to cumulative impacts.

Public Services. The Proposed Project would have no impact on public services and thus would not contribute to cumulative impacts.

Recreation. The Proposed Project would have no impact on recreation and thus would not contribute to cumulative impacts.

Transportation. For cumulative impacts, see Section 3.12, *Transportation*.

Utilities and Service Systems. The Proposed Project would have no impact on utilities and service systems and thus would not contribute to cumulative impacts.

c) **Less than Significant with Mitigation Incorporated.** The Proposed Project would not result in any substantial adverse effects on human beings, either directly or indirectly, because each potentially significant impact can be reduced to a less-than-significant level with the implementation of the mitigation measures provided in this document. No other substantial adverse effects on human beings are anticipated as a result of the Proposed Project, resulting in a less-than-significant impact with mitigation incorporated.

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Appendix A

Federal and State Special Status Species Known to Occur in Project/Action Area and Vicinity

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Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Nelson (3912157) OR Chico (3912167) OR Glenn (3912251) OR Llano Seco (3912158) OR Hamilton City (3912261) OR Princeton (3912241) OR Butte City (3912148) OR Ord Ferry (3912168) OR West of Biggs (3912147))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
adobe-lily *Fritillaria pluriflora*	PMLIL0V0F0	None	None	G2G3	S2S3	1B.2
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
American bumble bee *Bombus pensylvanicus*	IIHYM24260	None	None	G3G4	S2	
Antioch Dunes anthicid beetle *Anthicus antiochensis*	IICOL49020	None	None	G3	S3	
bank swallow *Riparia riparia*	ABPAU08010	None	Threatened	G5	S3	
big-scale balsamroot *Balsamorhiza macrolepis*	PDAST11061	None	None	G2	S2	1B.2
Brazilian watermeal *Wolffia brasiliensis*	PMLEM03020	None	None	G5	S2	2B.3
broadleaf pondweed *Stuckenia striata*	PMPOT030K0	None	None	G3G4Q	S2S3	2B.3
burrowing owl *Athene cunicularia*	ABNSB10010	None	Candidate Endangered	G4	S2	SSC
Butte County checkerbloom *Sidalcea robusta*	PDMAL110P0	None	None	G2	S2	1B.2
Butte County fritillary *Fritillaria eastwoodiae*	PMLIL0V060	None	None	G3Q	S3	3.2
Butte County meadowfoam *Limnanthes floccosa ssp. californica*	PDLIM02042	Endangered	Endangered	G4T1	S1	1B.1
California linderiella *Linderiella occidentalis*	ICBRA06010	None	None	G2G3	S2S3	
chinook salmon - Central Valley spring-run ESU *Oncorhynchus tshawytscha pop. 11*	AFCHA0205L	Threatened	Threatened	G5T2Q	S2	
Coastal and Valley Freshwater Marsh *Coastal and Valley Freshwater Marsh*	CTT52410CA	None	None	G3	S2.1	
Colusa grass *Neostapfia colusana*	PMPOA4C010	Threatened	Endangered	G1	S1	1B.1
Ferris' milk-vetch *Astragalus tener var. ferrisiae*	PDFAB0F8R3	None	None	G2T1	S1	1B.1
foothill yellow-legged frog - Feather River DPS *Rana boylii pop. 2*	AAABH01052	Threatened	Threatened	G3T2	S2	
foothill yellow-legged frog - north coast DPS *Rana boylii pop. 1*	AAABH01051	None	None	G3T4	S4	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
giant gartersnake *Thamnophis gigas*	ARADB36150	Threatened	Threatened	G2	S2	
great blue heron *Ardea herodias*	ABNGA04010	None	None	G5	S4	
great egret *Ardea alba*	ABNGA04040	None	None	G5	S4	
Great Valley Cottonwood Riparian Forest *Great Valley Cottonwood Riparian Forest*	CTT61410CA	None	None	G2	S2.1	
Great Valley Mixed Riparian Forest *Great Valley Mixed Riparian Forest*	CTT61420CA	None	None	G2	S2.2	
Great Valley Valley Oak Riparian Forest *Great Valley Valley Oak Riparian Forest*	CTT61430CA	None	None	G1	S1.1	
Great Valley Willow Scrub *Great Valley Willow Scrub*	CTT63410CA	None	None	G3	S3.2	
greater sandhill crane *Antigone canadensis tabida*	ABNMK01014	None	Threatened	G5T5	S2	FP
green sturgeon - southern DPS *Acipenser medirostris pop. 1*	AFCAA01031	Threatened	None	G2T1	S1	SSC
Greene's tuctoria *Tuctoria greenei*	PMPOA6N010	Endangered	Rare	G1	S1	1B.1
hoary bat *Lasiurus cinereus*	AMACC05032	None	None	G3G4	S4	
least Bell's vireo *Vireo bellii pusillus*	ABPBW01114	Endangered	Endangered	G5T2	S3	
merlin *Falco columbarius*	ABNKD06030	None	None	G5	S3S4	WL
North American porcupine *Erethizon dorsatum*	AMAFJ01010	None	None	G5	S3	
northern slender pondweed *Stuckenia filiformis ssp. alpina*	PMPOT03091	None	None	G5T5	S2S3	2B.2
northwestern pond turtle *Actinemys marmorata*	ARAAD02031	Proposed Threatened	None	G2	SNR	SSC
osprey *Pandion haliaetus*	ABNKC01010	None	None	G5	S4	WL
pallid bat *Antrozous pallidus*	AMACC10010	None	None	G4	S3	SSC
pink creamsacs *Castilleja rubicundula var. rubicundula*	PDSCR0D482	None	None	G5T2	S2	1B.2
recurved larkspur *Delphinium recurvatum*	PDRAN0B1J0	None	None	G2?	S2	1B.2
Sacramento anthicid beetle *Anthicus sacramento*	IICOL49010	None	None	G4	S4	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
silky cryptantha *Cryptantha crinita*	PDBOR0A0Q0	None	None	G2	S2	1B.2
silver-haired bat *Lasionycteris noctivagans*	AMACC02010	None	None	G3G4	S3S4	
steelhead - Central Valley DPS *Oncorhynchus mykiss irideus pop. 11*	AFCHA0209K	Threatened	None	G5T2Q	S2	SSC
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S4	
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G1G2	S2	SSC
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened	None	G3T3	S3	
vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened	None	G3	S3	
vernal pool tadpole shrimp *Lepidurus packardi*	ICBRA10010	Endangered	None	G3	S3	
watershield *Brasenia schreberi*	PDCAB01010	None	None	G5	S3	2B.3
western mastiff bat *Eumops perotis californicus*	AMACD02011	None	None	G4G5T4	S3S4	SSC
western red bat *Lasiurus frantzii*	AMACC05080	None	None	G4	S3	SSC
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
woolly rose-mallow *Hibiscus lasiocarpos var. occidentalis*	PDMAL0H0R3	None	None	G5T3	S3	1B.2
Yuma myotis *Myotis yumanensis*	AMACC01020	None	None	G5	S4	

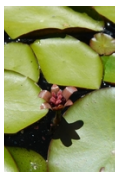
Record Count: 54

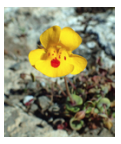
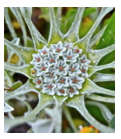
CNPS Rare Plant Inventory

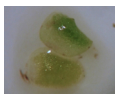
Search Results

26 matches found. Click on scientific name for details

Search Criteria: 9-Quad include **[3912157:3912167:3912251:3912158:3912261:3912168:3912241:3912148:3912147]**

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Astragalus pauperculus	depauperate milk-vetch	Fabaceae	annual herb	Mar-Jun	None	None	G4	S4	4.3	Yes	1974-01-01	 ©2012 Tim Kellison
Astragalus tener var. *ferrisiae*	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	None	None	G2T1	S1	1B.1	Yes	1994-01-01	No Photo Available
Azolla microphylla	Mexican mosquito fern	Azollaceae	annual/perennial herb	Aug	None	None	G5	S4	4.2		1994-01-01	No Photo Available
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	Mar-Jun	None	None	G2	S2	1B.2	Yes	1974-01-01	 ©1998 Dean Wm. Taylor
Brasenia schreberi	watershield	Cabombaceae	perennial rhizomatous herb (aquatic)	Jun-Sep	None	None	G5	S3	2B.3		2010-10-27	 ©2014 Kirsten Bovee
Brodiaea rosea ssp. *vallicola*	valley brodiaea	Themidaceae	perennial bulbiferous herb	Apr-May(Jun)	None	None	G5T3	S3	4.2	Yes	2019-01-07	 © 2011 Steven Perry
Calycadenia oppositifolia	Butte County calycadenia	Asteraceae	annual herb	Apr-Jul	None	None	G3	S3	4.2	Yes	1974-01-01	No Photo Available
Castilleja rubicundula var. *rubicundula*	pink creamsacs	Orobanchaceae	annual herb (hemiparasitic)	Apr-Jun	None	None	G5T2	S2	1B.2	Yes	2001-01-01	 ©2010 Vernon Smith
Centromadia parryi ssp. *rudis*	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	None	None	G3T3	S3	4.2	Yes	2007-05-22	 © 2019 John Doyen

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Claytonia palustris	marsh claytonia	Montiaceae	perennial herb	May-Oct	None	None	G4	S4	4.3	Yes	1988-01-01	 ©2006 Dean Wm. Taylor, Ph.D.
Cryptantha crinita	silky cryptantha	Boraginaceae	annual herb	Apr-May	None	None	G2	S2	1B.2	Yes	1980-01-01	 ©2009 Sierra Pacific Industries
Cryptantha rostellata	red-stemmed cryptantha	Boraginaceae	annual herb	Apr-Jun	None	None	G4	S3	4.2		2018-06-26	No Photo Available
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	None	None	G2?	S2?	1B.2	Yes	1988-01-01	No Photo Available
Erythranthe glaucescens	shield-bracted monkeyflower	Phrymaceae	annual herb	Feb-Aug(Sep)	None	None	G3G4	S3S4	4.3	Yes	1974-01-01	 Neal Kramer 2020
Fritillaria eastwoodiae	Butte County fritillary	Liliaceae	perennial bulbiferous herb	Mar-Jun	None	None	G3Q	S3	3.2		1974-01-01	 ©2009 Sierra Pacific Industries
Fritillaria pluriflora	adobe-lily	Liliaceae	perennial bulbiferous herb	Feb-Apr	None	None	G2G3	S2S3	1B.2	Yes	1974-01-01	 © 2015 Steve Matson
Hesperevax caulescens	hogwallow starfish	Asteraceae	annual herb	Mar-Jun	None	None	G3	S3	4.2	Yes	2001-01-01	 © 2017 John Doyen
Hibiscus lasiocarpos var. *occidentalis*	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	None	None	G5T3	S3	1B.2	Yes	1974-01-01	 © 2020 Steven Perry

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Lasthenia ferrisiae	Ferris' goldfields	Asteraceae	annual herb	Feb-May	None	None	G3	S3	4.2	Yes	2001-01-01	 © 2009 Zoya Akulova
Limnanthes floccosa ssp. *californica*	Butte County meadowfoam	Limnanthaceae	annual herb	Mar-May	FE	CE	G4T1	S1	1B.1	Yes	1980-01-01	 © 2007 George W. Hartwell
Limnanthes floccosa ssp. *floccosa*	woolly meadowfoam	Limnanthaceae	annual herb	Mar-May(Jun)	None	None	G4T4	S3	4.2		1980-01-01	 © 2021 Scot Loring
Neostapfia colusana	Colusa grass	Poaceae	annual herb	May-Aug	FT	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Sidalcea robusta	Butte County checkerbloom	Malvaceae	perennial rhizomatous herb	Apr-Jun	None	None	G2	S2	1B.2	Yes	1974-01-01	 © 2010 George W Hartwell
Stuckenia filiformis ssp. *alpina*	northern slender pondweed	Potamogetonaceae	perennial rhizomatous herb (aquatic)	May-Jul	None	None	G5T5	S2S3	2B.2		1994-01-01	 Dana York (2016)
Tuctoria greenei	Greene's tuctoria	Poaceae	annual herb	May-Jul(Sep)	FE	CR	G1	S1	1B.1	Yes	1974-01-01	 ©2008 F. Gauna
Wolffia brasiliensis	Brazilian watermeal	Araceae	perennial herb (aquatic)	Apr-Dec	None	None	G5	S2	2B.3		2001-01-01	 © 2021 Scot Loring

Showing 1 to 26 of 26 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2023. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 2 August 2023].

United States Department of the Interior

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

In Reply Refer To: 11/15/2024 22:58:58 UTC
Project Code: 2023-0130234
Project Name: Western Canal Water District Front Slide Gates Replacement Project

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

To Whom It May Concern:

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

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

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

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

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

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

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

This species list is provided by:

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

PROJECT SUMMARY

Project Code: 2023-0130234

Project Name: Western Canal Water District Front Slide Gates Replacement Project

Project Type: Dam - Maintenance/Modification

Project Description: The primary purpose of the Proposed Project is to replace the aging Front Slide Gates (FSG) structure across Little Butte Creek, to improve operational flexibility and water supply reliability and efficiency within the WCWD's extensive service area.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.54668075,-121.90413318232373,14z

Counties: Butte County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 9 threatened, endangered, or candidate species on this species list.

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

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

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

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

BIRDS

NAME	STATUS
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

REPTILES

NAME	STATUS
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened
Northwestern Pond Turtle *Actinemys marmorata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

AMPHIBIANS

NAME	STATUS
Western Spadefoot *Spea hammondii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5425	Proposed Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850	Threatened

CRUSTACEANS

NAME	STATUS
Conservancy Fairy Shrimp *Branchinecta conservatio* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi*	Endangered

NAME STATUS

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/2246

CRITICAL HABITATS

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

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency:	Environmental Science Associates
Name:	Christy Pierce
Address:	2600 Capitol Ave
Address Line 2:	Suite 200
City:	Sacramento
State:	CA
Zip:	95816
Email	cdawson@esassoc.com
Phone:	5308644874

Appendix B
Botanical Report

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2600 Capitol Avenue
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esassoc.com

August 31, 2023

Mr. Thomas Ostrowski, PE
Davids Engineering, Inc.
1772 Picasso Avenue, Suite A
Davis, CA 95618

Subject: Botanical Survey for the Front Slide Gates Replacement Project, Butte County, CA.

Dear Mr. Ostrowski:

This letter report has been prepared to document the results of a protocol-level botanical survey conducted for the Western Canal Water District's Front Slide Gates Replacement Project (Project) study area. The study area includes approximately 4.59 acres in Butte County (**Attachment A**).

Methods

An evaluation was conducted to determine if any special-status plants or sensitive habitats have the potential to occur in the study area. The results of database queries (**Attachment B**), including state and federal agencies, were used to compile a table of regionally-occurring special-status plants and sensitive natural communities (**Attachment C**).

Special-status plants evaluated are species listed (or candidate or proposed) under the federal or state endangered species acts, under the California Native Plant Protection Act, or that are California Rare Plant Rank (CRPR) 1 or 2 (CNPS 2023). Special-status natural communities are waters, wetlands, riparian communities, and any biological community ranked S1, S2, or S3 by CDFW (2023).

I conducted a field survey on July 25th, 2023. The field survey followed the U.S. Fish and Wildlife Service (USFWS 2000) and California Department of Fish and Wildlife (CDFW 2018) botanical survey guidelines. The fieldwork was conducted during the evident and identifiable period of special-status plants with the potential to occur in the study area. Portions of the riparian forest in the study area are thickly vegetated and uniform transects are not feasible. However, there are several openings in the riparian forest that allow access into the interior. The study area was searched systematically utilizing the openings in the riparian forest so that all areas where access was possible were searched. The margins of waterways in the study area, the grassland, and the area below the slide gates were more completely accessible. Approximately 5 person-hours were spent on-site during the botanical survey and 1 additional hour was spent keying specimens. All vascular plants observed were identified to a taxonomic rank sufficient to determine regulatory status (**Attachment D**).

Existing Conditions

The study area is in a riparian setting along Little Butte Creek near the bottom of the Sacramento Valley. Elevation ranges from approximately 97–106 feet. Topography is relatively flat, except for the banks of waterways and relief of several feet in the riparian forest. Soils consists mostly of silt loam or silty clay loam nonsaline alluvial soils subject to flooding (Dodgeland and Farwell series are the primary components; NRCS 2023). The study area includes margins of open water, riparian forest, grassland, and limited areas of emergent herbaceous vegetation. Nelson Road, the slide gates, and a dirt road around the riparian forest are the developed portions of the study area. Attachment A contains a vegetative communities map.

Little Butte Creek

Little Butte Creek is a perennial creek along the margins of the study area. Little Butte Creek is partially controlled by the slide gates in the study area, which divert water used for irrigation. Much of Little Butte Creek is open water with a substantial current that generally does not provide potential habitat for vegetation, but the margins of the open water areas, and in particular the area below the slide gates, does provide potential habitat. The margins of the open water consist of relatively steep banks dominated by herbaceous vegetation including Johnson grass (*Sorghum halepense*), nutsedge (*Cyperus* spp.), dallis grass (*Paspalum dilatatum*), Uruguayan water primrose (*Ludwigia hexapetala*), and ruderal species from the adjacent dirt road.

The area downstream of the slide gates is different in character than the steeper banks along open water areas. This area has gentler and more uneven banks, with topographic benches present that are vegetated and seasonally exposed. Willows (*Salix* spp.) are common along the banks. Uruguayan water primrose is dominant on the benches and almost the only species present in some areas.

Forested Wetland and Riparian Forest (Great Valley Mixed Riparian Forest)

The forested wetland meets wetland criteria. The riparian forest is slightly higher in elevation and does not meet wetland criteria, but has similar vegetation. They are thickly vegetated areas of uneven topography. Most of the area is bounded by the dirt road and Nelson Road. Smaller strips are on the southeast side of Nelson Road, and the northeast side of Little Butte Creek. Vegetation is dominated by trees including valley oak (*Quercus lobata*), Fremont cottonwood (*Populus fremontii* var. *fremontii*), and willows. The tree canopy is closed in many areas. The shrub layer is dominated by California button willow (*Cephalanthus occidentalis*) and the nonnative invasive Himalayan blackberry (*Rubus armeniacus*). The herb layer is very sparse and largely unvegetated due to deep shade near the ground surface. The conditions meet the description of Great Valley Mixed Riparian Forest (Holland 1986), a sensitive natural community included in the California Natural Diversity Database. The forested wetland and riparian forest may be categorized under the current CDFW (2023) natural communities list as Fremont cottonwood – arroyo willow forest (61.130.23).

Emergent Wetland

The emergent wetland consists of the lowest area within the riparian forest, which is linear and may be a water conveyance ditch that is no longer used. The emergent wetland is in deep shade and is largely unvegetated, although there is dense riparian forest along the margins. The bottom is mostly bare soil and leaf litter, with sparse patches of common tule (*Schoenoplectus acutus* var. *occidentalis*) and woolly rose-mallow (*Hibiscus lasiocarpos* var. *occidentalis*; see further discussion below).

Grassland

There is upland grassland in the east end of the study area on both sides of Nelson Road. The grassland is dominated by tall wheat grass (*Elymus ponticus*), bromes (*Bromus* spp.), Bermuda grass (*Cynodon dactylon*), bird's-foot trefoil (*Lotus corniculatus*), prickly lettuce (*Lactuca serriola*), and yellow star-thistle (*Centaurea solstitialis*), mostly nonnative species. There are a few small and widely-spaced trees and shrubs present.

Results

All plant species observed in the study area are listed in Attachment D. Two special-status plants were found in the study area, woolly rose-mallow and bristly sedge. Locations of special-status plants are shown in Attachment A. Reports of the special-status plants were made to the California Natural Diversity Database (**Attachment E**).

Woolly rose-mallow (*Hibiscus lasiocarpos* var. *occidentalis*)

A total of 77 woolly rose-mallow plants were identified in the study area. Woolly rose-mallow is a California Rare Plant Rank (CRPR) 1B.2 species. CRPR Rank 1 and 2 species are considered to meet state listing criteria and potential impacts must be considered under the California Environmental Quality Act (CEQA). All of the woolly rose-mallow plants were found in the emergent wetland or nearby areas of riparian forest. All were growing in areas of at least partial shade and many, especially in the emergent wetland, were growing in deep shade. A few of the plants in sunnier locations were in bloom on the day of the survey. Most had not bloomed yet. Photographs are in **Attachment F**.

Bristly sedge (*Carex comosa*)

A total of 10 bristly sedge plants were identified in the study area. Bristly sedge is a CRPR 2B.1 species. All of the bristly sedge plants are below the slide gates and on alluvial benches in Little Butte Creek. The bristly sedge is growing in open, sunny areas in dense patches of nonnative invasive Uruguayan water primrose (*Ludwigia hexapetala*). All of the plants were in bloom during the survey.

Please contact me with any questions.

Sincerely,

Chuck Hughes, M.S.
Senior Botanist/Biologist

Attachment A. Figures
Attachment B. Database Queries
Attachment C. Special-Status Plants and Natural Communities Table
Attachment D. Plants Observed
Attachment E. CNDDB Reports
Attachment F. Photographs

References

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

———. 2023. California Sensitive Natural Communities. June 1, 2023.

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Jepson Flora Project (Jepson). 2023. Jepson Online Interchange for California floristics. Accessed August, 2023. Available: http://ucjeps.berkeley.edu/interchange.html.

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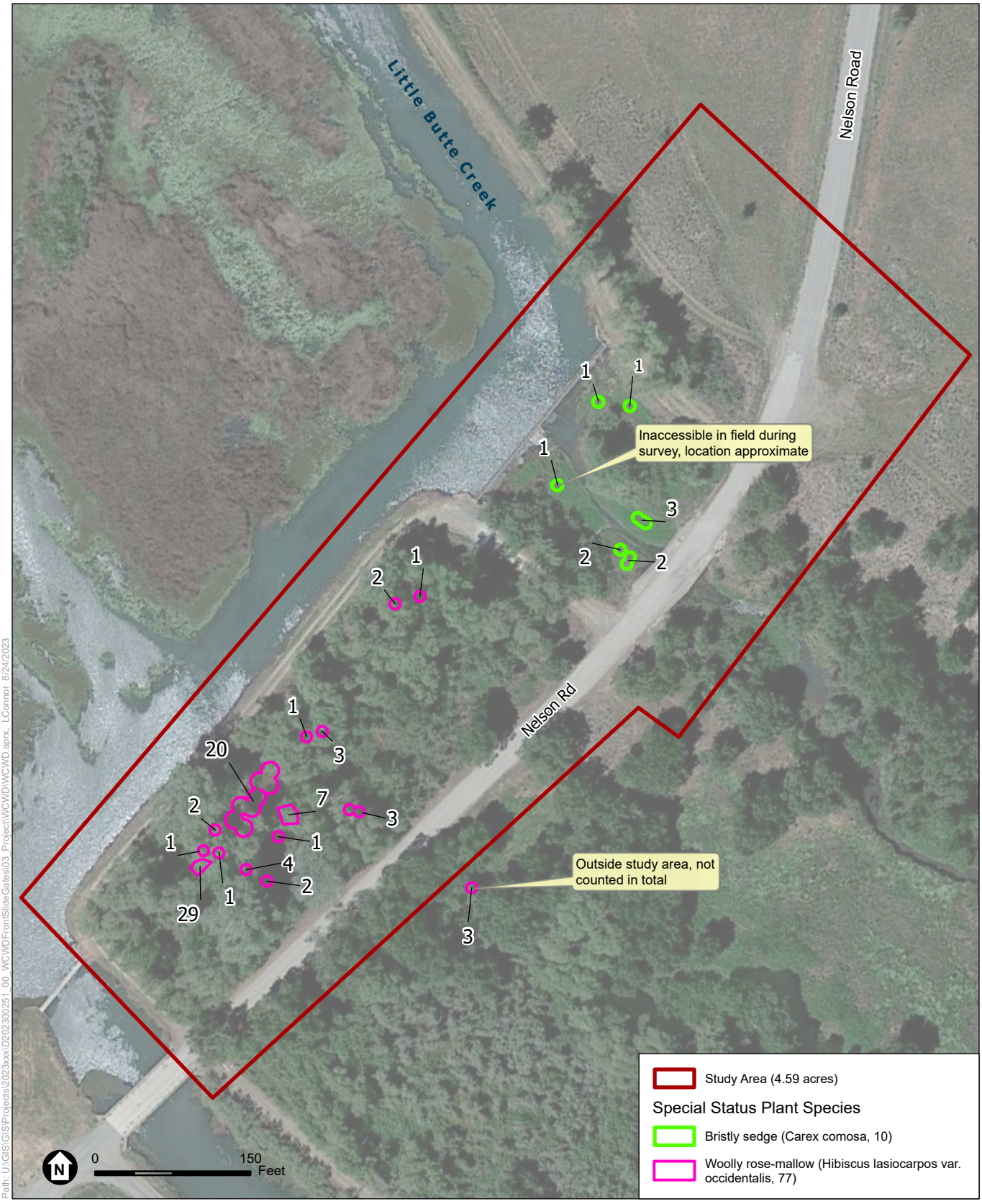
U.S. Fish and Wildlife Service (USFWS). 15 December 2005. Recovery plan for vernal pool ecosystems of California and Southern Oregon. Region 1, U.S. Fish and Wildlife Service, Portland, OR.

Attachment A
Figures



SOURCE: NAIP, 2022; ESA, 2023

WCWD Front Slide Gates Replacement

Figure 1
Botanical Survey

Prepared by: ESA

SOURCE: MAXAR; ESA 2023

WCWD Front Slide Gates Replacement/Site

Figure 2
Vegetative Communities

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Attachment B
Database Queries

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Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Llano Seco (3912158) OR Nelson (3912157) OR Chico (3912167) OR Glenn (3912251) OR Hamilton City (3912261) OR Ord Ferry (3912168) OR Princeton (3912241) OR Butte City (3912148) OR West of Biggs (3912147))
 AND Taxonomic Group IS (Dune OR Scrub OR Herbaceous OR Marsh OR Riparian OR Woodland OR Forest OR Alpine OR Inland Waters OR Marine OR Estuarine OR Riverine OR Palustrine OR Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes)

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Astragalus tener var. ferrisiae Ferris' milk-vetch	PDFAB0F8R3	None	None	G2T1	S1	1B.1
Balsamorhiza macrolepis big-scale balsamroot	PDAST11061	None	None	G2	S2	1B.2
Brasenia schreberi watershield	PDCAB01010	None	None	G5	S3	2B.3
Castilleja rubicundula var. rubicundula pink creamsacs	PDSCR0D482	None	None	G5T2	S2	1B.2
Coastal and Valley Freshwater Marsh Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
Cryptantha crinita silky cryptantha	PDBOR0A0Q0	None	None	G2	S2	1B.2
Delphinium recurvatum recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2
Fritillaria eastwoodiae Butte County fritillary	PMLIL0V060	None	None	G3Q	S3	3.2
Fritillaria pluriflora adobe-lily	PMLIL0V0F0	None	None	G2G3	S2S3	1B.2
Great Valley Cottonwood Riparian Forest Great Valley Cottonwood Riparian Forest	CTT61410CA	None	None	G2	S2.1	
Great Valley Mixed Riparian Forest Great Valley Mixed Riparian Forest	CTT61420CA	None	None	G2	S2.2	
Great Valley Valley Oak Riparian Forest Great Valley Valley Oak Riparian Forest	CTT61430CA	None	None	G1	S1.1	
Great Valley Willow Scrub Great Valley Willow Scrub	CTT63410CA	None	None	G3	S3.2	
Hibiscus lasiocarpos var. occidentalis woolly rose-mallow	PDMAL0H0R3	None	None	G5T3	S3	1B.2
Limnanthes floccosa ssp. californica Butte County meadowfoam	PDLIM02042	Endangered	Endangered	G4T1	S1	1B.1
Neostapfia colusana Colusa grass	PMPOA4C010	Threatened	Endangered	G1	S1	1B.1
Sidalcea robusta Butte County checkerbloom	PDMAL110P0	None	None	G2	S2	1B.2
Stuckenia filiformis ssp. alpina northern slender pondweed	PMPOT03091	None	None	G5T5	S2S3	2B.2
Tuctoria greenei Greene's tuctoria	PMPOA6N010	Endangered	Rare	G1	S1	1B.1
Wolffia brasiliensis Brazilian watermeal	PMLEM03020	None	None	G5	S2	2B.3

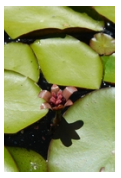
Record Count: 20

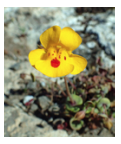
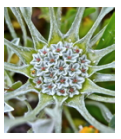
CNPS Rare Plant Inventory

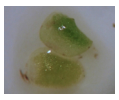
Search Results

26 matches found. Click on scientific name for details

Search Criteria: 9-Quad include **[3912157:3912167:3912251:3912158:3912261:3912168:3912241:3912148:3912147]**

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Astragalus pauperculus	depauperate milk-vetch	Fabaceae	annual herb	Mar-Jun	None	None	G4	S4	4.3	Yes	1974-01-01	 ©2012 Tim Kellison
Astragalus tener var. *ferrisiae*	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	None	None	G2T1	S1	1B.1	Yes	1994-01-01	No Photo Available
Azolla microphylla	Mexican mosquito fern	Azollaceae	annual/perennial herb	Aug	None	None	G5	S4	4.2		1994-01-01	No Photo Available
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	Mar-Jun	None	None	G2	S2	1B.2	Yes	1974-01-01	 ©1998 Dean Wm. Taylor
Brasenia schreberi	watershield	Cabombaceae	perennial rhizomatous herb (aquatic)	Jun-Sep	None	None	G5	S3	2B.3		2010-10-27	 ©2014 Kirsten Bovee
Brodiaea rosea ssp. *vallicola*	valley brodiaea	Themidaceae	perennial bulbiferous herb	Apr-May(Jun)	None	None	G5T3	S3	4.2	Yes	2019-01-07	 © 2011 Steven Perry
Calycadenia oppositifolia	Butte County calycadenia	Asteraceae	annual herb	Apr-Jul	None	None	G3	S3	4.2	Yes	1974-01-01	No Photo Available
Castilleja rubicundula var. *rubicundula*	pink creamsacs	Orobanchaceae	annual herb (hemiparasitic)	Apr-Jun	None	None	G5T2	S2	1B.2	Yes	2001-01-01	 ©2010 Vernon Smith
Centromadia parryi ssp. *rudis*	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	None	None	G3T3	S3	4.2	Yes	2007-05-22	 © 2019 John Doyen

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Claytonia palustris	marsh claytonia	Montiaceae	perennial herb	May-Oct	None	None	G4	S4	4.3	Yes	1988-01-01	 ©2006 Dean Wm. Taylor, Ph.D.
Cryptantha crinita	silky cryptantha	Boraginaceae	annual herb	Apr-May	None	None	G2	S2	1B.2	Yes	1980-01-01	 ©2009 Sierra Pacific Industries
Cryptantha rostellata	red-stemmed cryptantha	Boraginaceae	annual herb	Apr-Jun	None	None	G4	S3	4.2		2018-06-26	No Photo Available
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	None	None	G2?	S2?	1B.2	Yes	1988-01-01	No Photo Available
Erythranthe glaucescens	shield-bracted monkeyflower	Phrymaceae	annual herb	Feb-Aug(Sep)	None	None	G3G4	S3S4	4.3	Yes	1974-01-01	 Neal Kramer 2020
Fritillaria eastwoodiae	Butte County fritillary	Liliaceae	perennial bulbiferous herb	Mar-Jun	None	None	G3Q	S3	3.2		1974-01-01	 ©2009 Sierra Pacific Industries
Fritillaria pluriflora	adobe-lily	Liliaceae	perennial bulbiferous herb	Feb-Apr	None	None	G2G3	S2S3	1B.2	Yes	1974-01-01	 © 2015 Steve Matson
Hesperevax caulescens	hogwallow starfish	Asteraceae	annual herb	Mar-Jun	None	None	G3	S3	4.2	Yes	2001-01-01	 © 2017 John Doyen
Hibiscus lasiocarpos var. *occidentalis*	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	None	None	G5T3	S3	1B.2	Yes	1974-01-01	 © 2020 Steven Perry

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Lasthenia ferrisiae	Ferris' goldfields	Asteraceae	annual herb	Feb-May	None	None	G3	S3	4.2	Yes	2001-01-01	 © 2009 Zoya Akulova
Limnanthes floccosa ssp. *californica*	Butte County meadowfoam	Limnanthaceae	annual herb	Mar-May	FE	CE	G4T1	S1	1B.1	Yes	1980-01-01	 © 2007 George W. Hartwell
Limnanthes floccosa ssp. *floccosa*	woolly meadowfoam	Limnanthaceae	annual herb	Mar-May(Jun)	None	None	G4T4	S3	4.2		1980-01-01	 © 2021 Scot Loring
Neostapfia colusana	Colusa grass	Poaceae	annual herb	May-Aug	FT	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Sidalcea robusta	Butte County checkerbloom	Malvaceae	perennial rhizomatous herb	Apr-Jun	None	None	G2	S2	1B.2	Yes	1974-01-01	 © 2010 George W Hartwell
Stuckenia filiformis ssp. *alpina*	northern slender pondweed	Potamogetonaceae	perennial rhizomatous herb (aquatic)	May-Jul	None	None	G5T5	S2S3	2B.2		1994-01-01	 Dana York (2016)
Tuctoria greenei	Greene's tuctoria	Poaceae	annual herb	May-Jul(Sep)	FE	CR	G1	S1	1B.1	Yes	1974-01-01	 ©2008 F. Gauna
Wolffia brasiliensis	Brazilian watermeal	Araceae	perennial herb (aquatic)	Apr-Dec	None	None	G5	S2	2B.3		2001-01-01	 © 2021 Scot Loring

Showing 1 to 26 of 26 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2023. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 2 August 2023].

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Butte County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an

office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
Yellow-billed Cuckoo Coccyzus americanus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Giant Garter Snake Thamnophis gigas Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate
Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS

Conservancy Fairy Shrimp Branchinecta conservatio — Endangered
Wherever found
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/8246

Vernal Pool Fairy Shrimp Branchinecta lynchi — Threatened
Wherever found
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/498

Vernal Pool Tadpole Shrimp Lepidurus packardi — Endangered
Wherever found
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/2246

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

Additional information can be found using the following links:

- Eagle Managment https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

There are bald and/or golden eagles in your project area.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list,click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Jan 1 to Aug 31
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

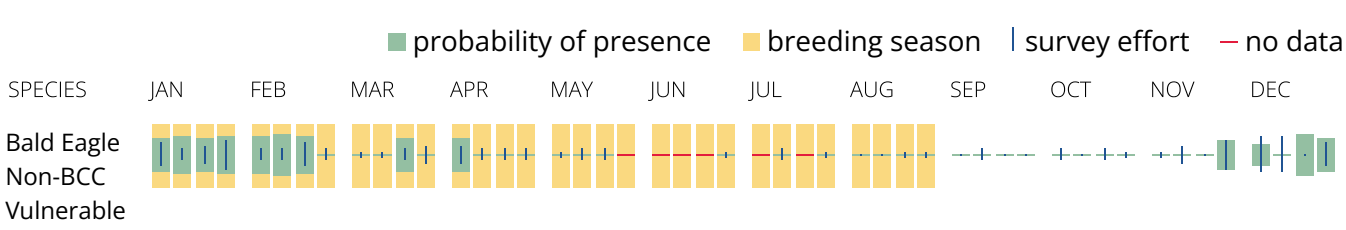
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

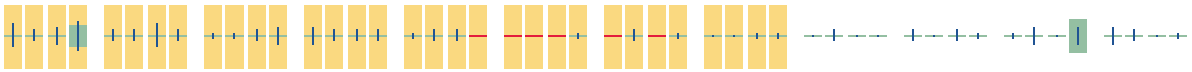
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Golden Eagle Non-BCC Vulnerable



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Jan 1 to Aug 31
Belding's Savannah Sparrow Passerculus sandwichensis beldingi This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15

Black Tern Chlidonias niger — Breeds May 15 to Aug 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3093

Bullock's Oriole Icterus bullockii — Breeds Mar 21 to Jul 25
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

California Gull Larus californicus — Breeds Mar 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Yellow-billed Magpie Pica nuttalli — Breeds Apr 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9726

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

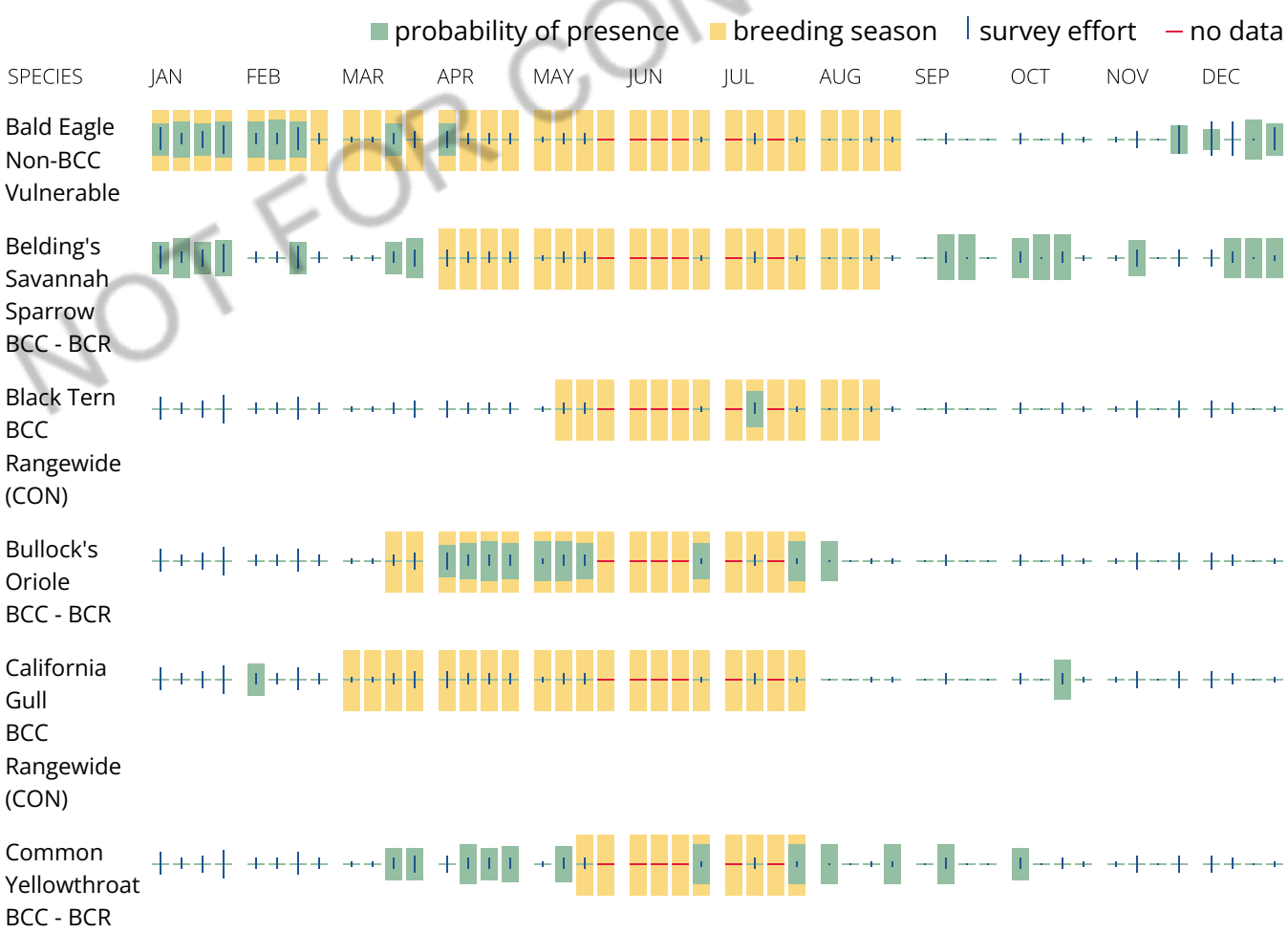
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

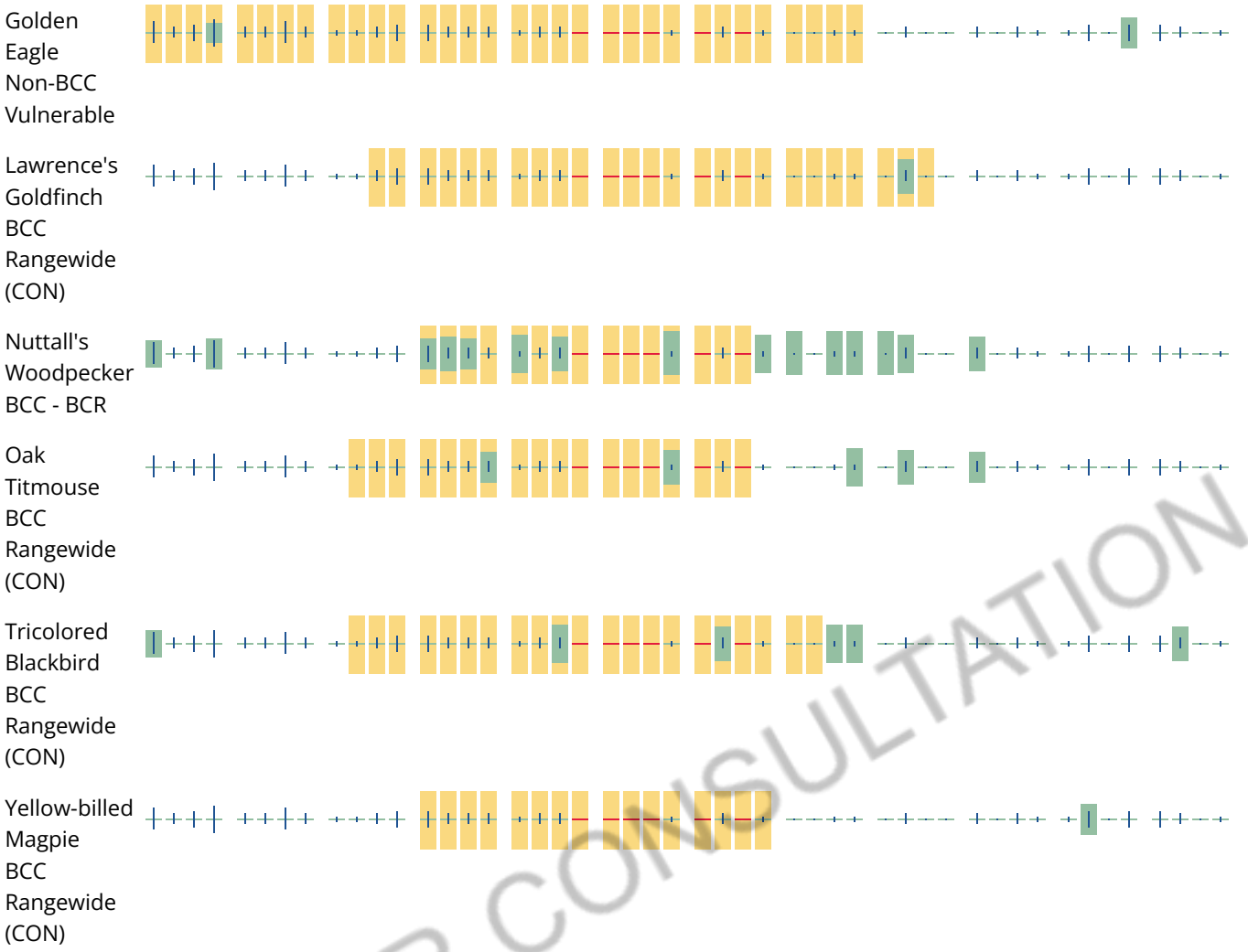
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring

in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must

undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work.

There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Attachment C

Special-Status Plants and Natural Communities Table

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SPECIAL-STATUS PLANTS AND NATURAL COMMUNITIES

Scientific Name	Common Name	Regulatory Status (Federal/State/ Local/CRPR)	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
PLANTS					
Astragalus tener var. ferrisiae	Ferris' milk-vetch	--/--/1B.1	Annual herb found in vernally mesic meadows and subalkaline flats from 5–250 feet. Known from the Sacramento Valley.	April–May	**None**. The study area does not provide suitable habitats or wetland types for this species.
Balsamorhiza macrolepis	Big-scale balsamroot	--/--/1B.2	Perennial herb found in chaparral, cismontane woodland, and grassland, sometimes on serpentine soils, from 295 to 5,102 ft. Known from the Bay Area, margins of the Sacramento Valley, and Sierra foothills.	March–July	**None**. The species is not known from the bottomlands of the Sacramento Valley.
Brasenia schreberi	Watershield	--/--/2B.3	Aquatic perennial rhizomatous herb found in freshwater marshes and swamps from 100 to 7,200 ft. Known from the Klamath Range, north Coast Range, high Cascade and Sierra Nevada, Sacramento Valley, and Modoc Plateau. Jepson (2023) describes the habitat as ponds and slow streams.	June–September	**High**. Waterways and their margins in the study area provide potential habitat and there is a record nearby.
Carex comosa	Bristly sedge	--/--/2B.1	Perennial rhizomatous herb found in wet areas in coastal prairie, grassland, and along lake margins from 0–2,050 feet. Known from the Klamath Ranges, Modoc Plateau and Warner Mts., inner north coast ranges, high Cascade Range, Central Valley, Bay Area, central coast, and San Bernardino Mts.	May–September	**Present**. Observed on-site during survey. The queried databases did not return this species with a 9-quad search.
Castilleja rubicundula var. rubicundula	Pink creamsacs	--/--/1B.2	Annual hemiparasitic herb found in serpentine substrates of chaparral openings, cismontane woodland, meadows and seeps, and grassland from 65 to 2,985 ft. Known from Butte, Contra Costa, Colusa, Glenn, Lake, Napa, Santa Clara, and Shasta cos.	April–June	**None**. There are no serpentine substrates in the study area.

SPECIAL-STATUS PLANTS AND NATURAL COMMUNITIES

Scientific Name	Common Name	Regulatory Status (Federal/State/ Local/CRPR)	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Cryptantha crinita	Silky cryptantha	--/--/1B.2	Annual herb found in gravelly streambeds/substrates of cismontane woodland, lower montane coniferous forest, riparian forest/woodland, and grassland from 200 to 4,000 ft.	April–May	**None**. The study area does not provide suitable gravelly streambed/substrate habitat for this species.
Delphinium recurvatum	Recurved larkspur	--/--/1B.2	Perennial herb found in poorly drained, fine, alkaline soils of chenopod scrub, cismontane woodland, and grassland from 10 to 2,600 ft.	March–June	**None**. The study area does not provide suitable alkaline soils.
Fritillaria pluriflora	Adobe lily	--/--/1B.2	Perennial bulbiferous herb often found in adobe soils of chaparral, cismontane woodland, and grassland from 195 to 2,315 ft. Known from the inner North Coast Ranges, northern Sierra Nevada foothills, and Sacramento Valley.	February–April	**None**. The study area does not have suitable soils.
Hibiscus lasiocarpos var. *occidentalis*	Woolly rose-mallow	--/--/1B.2	Perennial rhizomatous herb found in freshwater marshes and swamps, often in riprap on the sides of levees, from 0 –400 feet. Known from the Central Valley and Cascade Range foothills.	June–September	**Present**. Observed on-site during survey.
Limnanthes floccosa ssp. *californica*	Butte County meadowfoam	E/E/1B.1	Annual herb found in mesic soils of valley and foothill grassland and vernal pools from 150 to 3,050 ft. Known from only about 20 occurrences in Butte co.	March–May	**None**. There are no vernal pool soils or landscapes in the study area.

SPECIAL-STATUS PLANTS AND NATURAL COMMUNITIES

Scientific Name	Common Name	Regulatory Status (Federal/State/ Local/CRPR)	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Neostapfia colusana	Colusa grass	T/E/1B.1	Annual herb found in large adobe vernal pools from 15 to 660 ft. Known from Glenn, Merced, Solano, Stanislaus, and Yolo cos. Presumed extirpated from Colusa Co. Members of the Orcuttieae tribe inhabit large vernal pools or playas with inundation lasting until May or June, in areas of the pools where other plants are almost entirely absent. In the Sacramento Valley Colusa grass is known from the rim of alkaline basins (USFWS 2005).	May–August	**None**. There are no vernal pool soils or landscapes in the study area.
Sidalcea robusta	Butte County checkerbloom	--/--/1B.2	Perennial rhizomatous herb found in chaparral and cismontane woodland from 300 to 5,300 feet. Typically occurs in dry banks in chaparral/blue-oak woodland transition areas.	April–June	**None**. There is no suitable habitat in the study area.
Stuckenia filiformis ssp. *alpina*	Northern slender pondweed	--/--/2B.2	Perennial rhizomatous aquatic herb found in assorted shallow freshwater marshes and swamps from 950 to 7,100 feet. Known from the Klamath Ranges, central high Sierra Nevada, Great Valley, Central Coast, Bay Area, and Great Basin.	May–July	**Moderate**. The waterways in the study area provide potential habitat.
Tuctoria greenei	Greene's Tuctoria	E/R/1B.1	Annual herb found in vernal pools from 100 to 3,500 ft. Known from Butte, Colusa, Glenn, Merced, Modoc, Shasta and Tehama cos. Presumed extirpated in Fresno, Madera, San Joaquin, Stanislaus, and Tulare cos.	May–September	**None**. There are no vernal pool soils or landscapes in the study area.

SPECIAL-STATUS PLANTS AND NATURAL COMMUNITIES

Scientific Name	Common Name	Regulatory Status (Federal/State/ Local/CRPR)	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Wolffia brasiliensis	Brazilian watermeal	--/--/2B.3	Very small floating aquatic herb that occurs in shallow freshwater marshes, swamps, and ponds from 65 to 330 ft. Known from the Sacramento Valley and Bay Area.	April–December	**High**. The waterways in the study area provide potential habitat and there is a record nearby.
NATURAL COMMUNITIES					
Coastal and Valley Freshwater Marsh		--	A permanently flooded freshwater marsh dominated by emergent perennial monocots 4-5m tall. Often lacks a significant current that allows deep, peaty soils to accumulate. Characteristic species include *Carex* spp., *Eleocharis* spp., *Scirpus* spp., *Schoenoplectus* spp., *Typha* spp., and *Verbena bonariensis*. Most extensive in the upper portion of the Sacramento-San Joaquin River Delta. Commonly occurs in the Sacramento and San Joaquin valleys in river oxbows and other flood plain areas.	Year-round	**Present.** See letter for discussion.
Great Valley Cottonwood Riparian Forest		--	Deciduous riparian forest dominated by *Populus fremontii* and *Salix gooddingii* with dense understory. Lianas are common including *Vitis californica*. Frequent flooding prevents other trees, such as *Acer negundo* and *Fraxinus latifolia*, from reaching canopy height. Occurs in areas of fine-textured alluvium nears streams with subsurface flow even when the channel is dry. Additional characteristic species include: *Cephalanthus occidentalis*, *Elymus triticoides*, and *Salix* spp.	Year-round	**Absent.** Riparian forest on-site is better characterized as mixed.

SPECIAL-STATUS PLANTS AND NATURAL COMMUNITIES

Scientific Name	Common Name	Regulatory Status (Federal/State/ Local/CRPR)	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
	Great Valley Mixed Riparian Forest	--	Tall, dense, winter-deciduous, broadleafed riparian forest. Tree canopy is usually fairly well closed and moderately to densely stocked with several species. Soil is relatively fine-textured alluvium set back from active river channels. Flooding does occur, but erosion and physical battering is not too severe. Occurs on floodplains of low-gradient, depositional streams of the Great Valley, usually below 500 ft. Characteristic species include: *Acer negundo*, *Juglans hindsii*, *Platanus racemosa*, *Populus fremontii*, and *Salix* spp.	Year-round	**Present.** See letter for discussion.
	Great Valley Valley Oak Riparian Forest	--	A closed-canopy deciduous riparian forest dominated by *Quercus lobata* with a scattered understory, including lianas, *Fraxinus latifolia*, *Juglans hindsii*, and *Platanus racemosa*. Occurs in the highest parts of river floodplains above the active river channels, in areas with silty alluvium deposits and subsurface water.	Year-round	**Absent.** Riparian forest on-site is better characterized as mixed.

SPECIAL-STATUS PLANTS AND NATURAL COMMUNITIES

Scientific Name	Common Name	Regulatory Status (Federal/State/ Local/CRPR)	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
			A streamside community dominated by winter-deciduous willows (*Salix* spp.) with little understory or herbaceous vegetaton. Characteristic species include: *Chenopodium ambrosioidea, Populus fremontii, Rosa californica,* and *Vitis californica.* Found on watercourses throughout the Great Valley watershed, usually below 1,000 ft.		**Absent.** Riparian forest on-site is better characterized as mixed.
Great Valley Willow Scrub		--		Year-round	

KEY:

Federal: (USFWS)
FE = Listed as Endangered by the Federal Government
FT = Listed as Threatened by the Federal Government
FC = Candidate for listing by the Federal Government

State: (CDFW)
SE = Listed as Endangered by the State of California
ST = Listed as Threatened by the State of California
SR = Listed as Rare by the State of California (plants only)
SC = Candidate for listing by the State of California
CSC = California Species of Special Concern

CRPR: (California Rare Plant Rank)
Rank 1A = Plants presumed extinct in California
Rank 1B = Plants rare, threatened, or endangered in California and elsewhere
Rank 2 = Plants rare, threatened, or endangered in California but more common elsewhere
Rank 3 = Plants about which more information is needed.

The "Potential for Occurrence" categories are defined as follows:

Absent: (1) its specific habitat requirements (e.g., serpentine grasslands, as opposed to grasslands occurring on other soils) are not present; AND/OR (2) it is outside the range or presumed to be extirpated from the area or region.

Low: (1) its known current distribution or range is outside of but near the study area; AND/OR (2) only limited or marginally suitable habitat is present within the study area.

Moderate: (1) there is habitat present within the study area or immediately adjacent areas; AND (2) the study area is within the known range of the species, even if the species was not observed during general biological surveys.

High: (1) there is habitat present within the study area or immediately adjacent areas; AND (2) the study area is within the known range of the species; AND/OR (3) there are records of the species on or near the site.

Present: Recently confirmed on the site.

SOURCES: CNPS 2023, Holland 1986, Jepson 2023.

Attachment D
Plants Observed

PLANTS OBSERVED

Family	Scientific Name	Common Name	Native/ Introduced
FERNS & ALLIES			
Azollaceae	*Azolla filiculoides*	Mosquito fern	N
EUDICOTS			
Anacardiaceae	*Toxicodendron diversilobum*	Western poison oak	N
Apiaceae	*Conium maculatum*	Poison hemlock	I
	Torilis arvensis	Tall sock-destroyer	I
Asteraceae	*Ambrosia* sp.	Ragweed	--
	Artemisia douglasiana	Mugwort	N
	Bidens sp.	Bidens	--
	Carduus pycnocephalus	Italian thistle	I
	Centaurea solstitialis	Yellow star-thistle	I
	Cichorium intybus	Chicory	I
	Cirsium arvense	Canada thistle	I
	Dittrichia graveolens	Stinkwort	I
	Erigeron sp. (=*Conyza*)	Horseweed	--
	Euthamia occidentalis	Western goldenrod	N
	Helminthotheca echioides	Bristly ox-tongue	I
	Lactuca saligna	Lettuce	I
	Lactuca serriola	Prickly lettuce	I
	Pseudognaphalium sp.	Cudweed	-
	Xanthium strumarium	Cocklebur	N
Brassicaceae	*Hirschfeldia incana*	Mustard	I
Convolvulaceae	*Convolvulus arvensis*	Field bindweed	I
Euphorbiaceae	*Euphorbia maculata*	Spotted spurge	I
Fabaceae	*Lotus corniculatus*	Bird's-foot trefoil	I
	Medicago polymorpha	California burclover	I
	Melilotus alba	White sweetclover	I
	Melilotus officinalis	Yellow sweetclover	I
	Trifolium fragiferum	Strawberry clover	I
Fagaceae	*Quercus lobata*	Valley Oak	N
Geraniaceae	*Erodium cicutarium*	Filaree	I
	Geranium dissectum	Wild geranium	I
Lamiaceae	*Stachys* sp.	Hedge nettle	N
Malvaceae	*Hibiscus lasiocarpos* var. *occidentalis*	Woolly rose-mallow	N
	Malva parviflora	Cheeseweed	I
	Malvella leprosa	Alkali-mallow	N
Moraceae	*Ficus carica*	Edible fig	I
	Morus alba	White mulberry	I

Family	Scientific Name	Common Name	Native/ Introduced
Onagraceae	*Epilobium brachycarpum*	Fireweed	N
	Epilobium ciliatum	Willowherb	N
	Ludwigia hexapetala	Uruguayan water primrose	I
Plantaginaceae	*Kickxia spuria*	Kickxia	I
	Plantago lanceolata	English plantain	I
Polygonaceae	*Persicaria punctata*	Smartweed	N
	Polygonum aviculare	Knotweed	I
	Rumex crispus	Curly dock	I
	Rumex pulcher	Fiddle dock	I
Rosaceae	*Rubus armeniacus*	Himalayan blackberry	I
	Prunus cerasifera	Cherry plum	I
Rubiaceae	*Cephalanthus occidentalis*	California button willow	N
Salicaceae	*Populus fremontii* spp. *fremontii*	Fremont cottonwood	N
	Salix exigua	Willow	N
	Salix gooddingii	Goodding's black willow	N
	Salix lasiolepis	Arroyo willow	N
Scrophulariaceae	*Verbascum blattaria*	Moth mullein	I
	Verbascum thapsus	Woolly mullein	I
Verbenaceae	*Phyla nodiflora*	Phyla	N
	Verbena bonariensis	Vervain	I
Vitaceae	*Vitis californica*	California wild grape	N
Zygophyllaceae	*Tribulus terrestris*	Puncture vine	I
MONOCOTS			
Cyperaceae	*Carex barbarae*	Whiteroot sedge	N
	Carex comosa	Bristly sedge	N
	Cyperus eragrostis	Tall Sedge	N
	Cyperus erythrorhizos	Nutsedge	N
	Schoenoplectus acutus var. *occidentalis*	Common tule	N
Juncaceae	*Juncus balticus* ssp. *ater*	Baltic rush	N
	Juncus effusus ssp. *pacificus*	Pacific rush	N
	Juncus sp.	Rush	--
Poaceae	*Avena barbata*	Slender wild oat	I
	Bromus catharticus var. *elatus*	Chilean brome	I
	Bromus diandrus	Ripgut grass	I
	Bromus hordeaceus	Soft brome	I
	Bromus madritensis ssp. *madritensis*	Foxtail chess	I
	Bromus madritensis ssp. *rubens*	Red brome	I
	Cynodon dactylon	Bermuda grass	I
	Elymus caput-medusae	Medusa head	I

Family	Scientific Name	Common Name	Native/ Introduced
	Elymus ponticus	Tall wheat grass	I
	Festuca perennis	Rye grass	I
	Hordeum marinum ssp. *gussoneanum*	Mediterranean barley	I
	Hordeum murinum ssp. *leporinum*	Hare barley	I
	Leersia oryzoides	Rice cutgrass	N
	Paspalum dilatatum	Dallis grass	I
	Phalaris arundinacea	Reed canary grass	I
	Phalaris paradoxa	Hood canary grass	I
	Polypogon monspeliensis	Annual beard grass	I
	Sorghum halepense	Johnson grass	I
Potamogetonaceae	*Potamogeton crispus*	Crisp-leaved pondweed	I
Typhaceae	*Typha* sp.	Cattail	N

Attachment E
CNDDB Reports

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CNDDB Online Field Survey Form Report

California Natural Diversity Database
Department of Fish and Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: 916.324.0475
cnddb@wildlife.ca.gov
www.dfg.ca.gov/biogeodata/cnddb/

This data has been reported to the CNDDB, but may not have been evaluated by the CNDDB staff

Source code HUG23F0001
Quad code 3912158
Occ. no. _____
EO index no._____
Map index no._____

Scientific name: *Hibiscus lasiocarpos var. occidentalis*

Common name: woolly rose-mallow

Date of field work (mm-dd-yyyy): 07-25-2023

Comment about field work date(s):

OBSERVER INFORMATION

Observer: Charles C. Hughes

Affiliation:

Address: Environmental Science Associates 2600 Capitol Avenue, Suit 200, Sacramento, CA 95822

Email: chughes@esassoc.com

Phone: (916) 425-3615

Other observers:

DETERMINATION

Keyed in: The Jepson Manual

Compared w/ specimen at:

Compared w/ image in: Calphotos

By another person:

Other: Familiar with species

Identification explanation:

Identification confidence: Very confident

Species found: Yes **If not found, why not?**

Level of survey effort:

Total number of individuals: 80

Collection? No **Collection number:**

Museum/Herbarium:

PLANT INFORMATION

Phenology:

vegetative	flowering	fruiting
95 %	5 %	0 %

SITE INFORMATION

Habitat description: Mature riparian forest dominated by cottonwoods and willows.

Slope: 0

Land owner/manager:

Aspect: NA

Site condition + population viability: Good

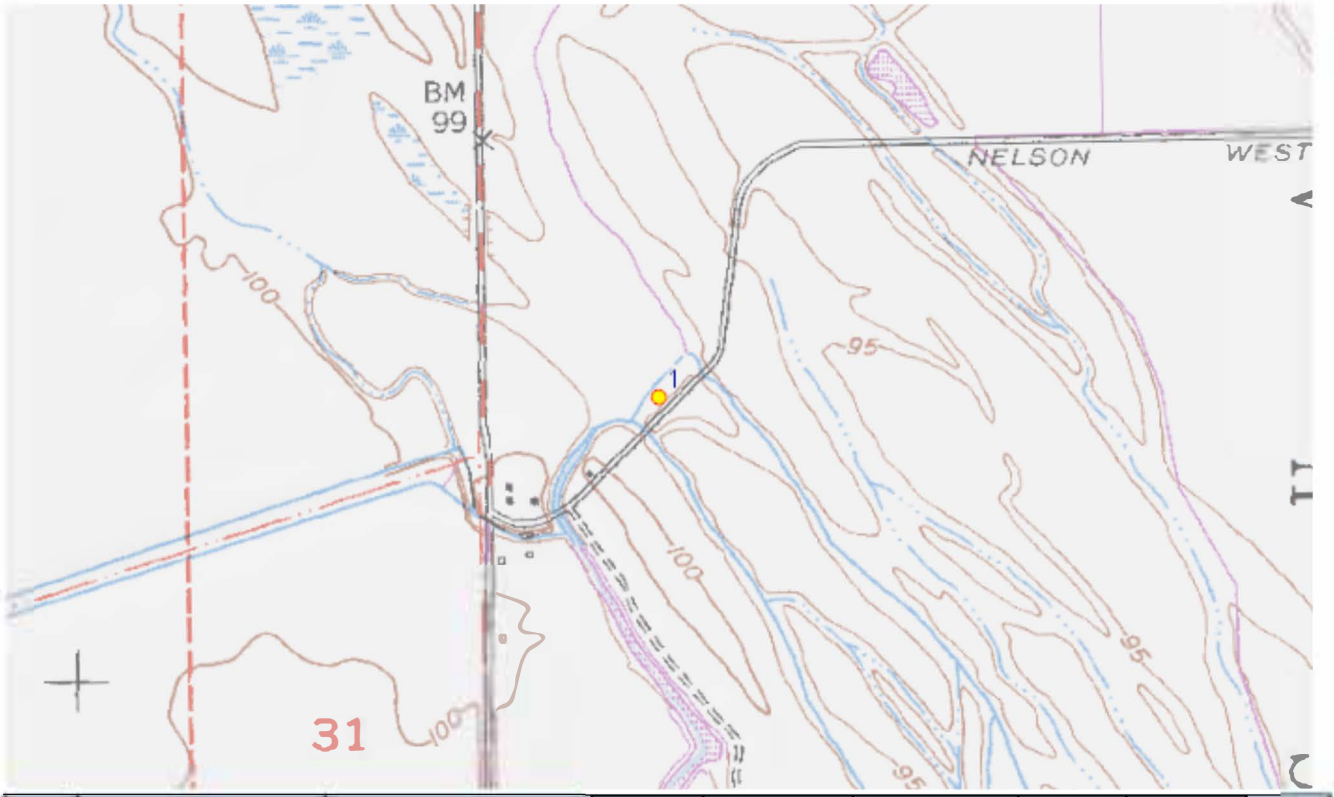
Immediate & surrounding land use:

Visible disturbances: None

Threats:

General comments:

MAP INFORMATION



ID	County	24K Quadrangle	Elev. (ft)	Latitude NAD83	Longitude NAD83	UTM E NAD83	UTM N NAD83	UTM Zone
	Butte	Llano Seco	97	39.54662	-121.90440	594137	4378012	10
	Public Land Survey	**Feature Comment**						
1	M T20N R01E 31							

The mapped feature is accurate within: 20 m

Source of mapped feature: Aerial Photograph

Mapping notes:

Location/directions comments:

Attachment(s):

CNDDB Online Field Survey Form Report

California Natural Diversity Database
Department of Fish and Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: 916.324.0475
cnddb@wildlife.ca.gov
www.dfg.ca.gov/biogeodata/cnddb/

This data has been reported to the CNDDB, but may not have been evaluated by the CNDDB staff

Source code HUG23F0002
Quad code 3912158
Occ. no. _____
EO index no. _____
Map index no. _____

Scientific name: *Carex comosa*

Common name: bristly sedge

Date of field work (mm-dd-yyyy): 07-25-2023

Comment about field work date(s):

OBSERVER INFORMATION

Observer: Charles C. Hughes

Affiliation:

Address: Environmental Science Associates 2600 Capitol Avenue, Suit 200, Sacramento, CA 95822

Email: chughes@esassoc.com

Phone: (916) 425-3615

Other observers:

DETERMINATION

Keyed in: The Jepson Manual

Compared w/ specimen at:

Compared w/ image in: Calphotos

By another person:

Other: Familiar with species.

Identification explanation:

Identification confidence: Very confident

Species found: Yes **If not found, why not?**

Level of survey effort:

Total number of individuals: 10

Collection? No **Collection number:**

Museum/Herbarium:

PLANT INFORMATION

Phenology:

vegetative	flowering	fruiting
0 %	100 %	0 %

SITE INFORMATION

Habitat description: Low stream bench dominated by Ludwigia hexapetala.

Slope: 0

Land owner/manager:

Aspect: NA

Site condition + population viability: Good

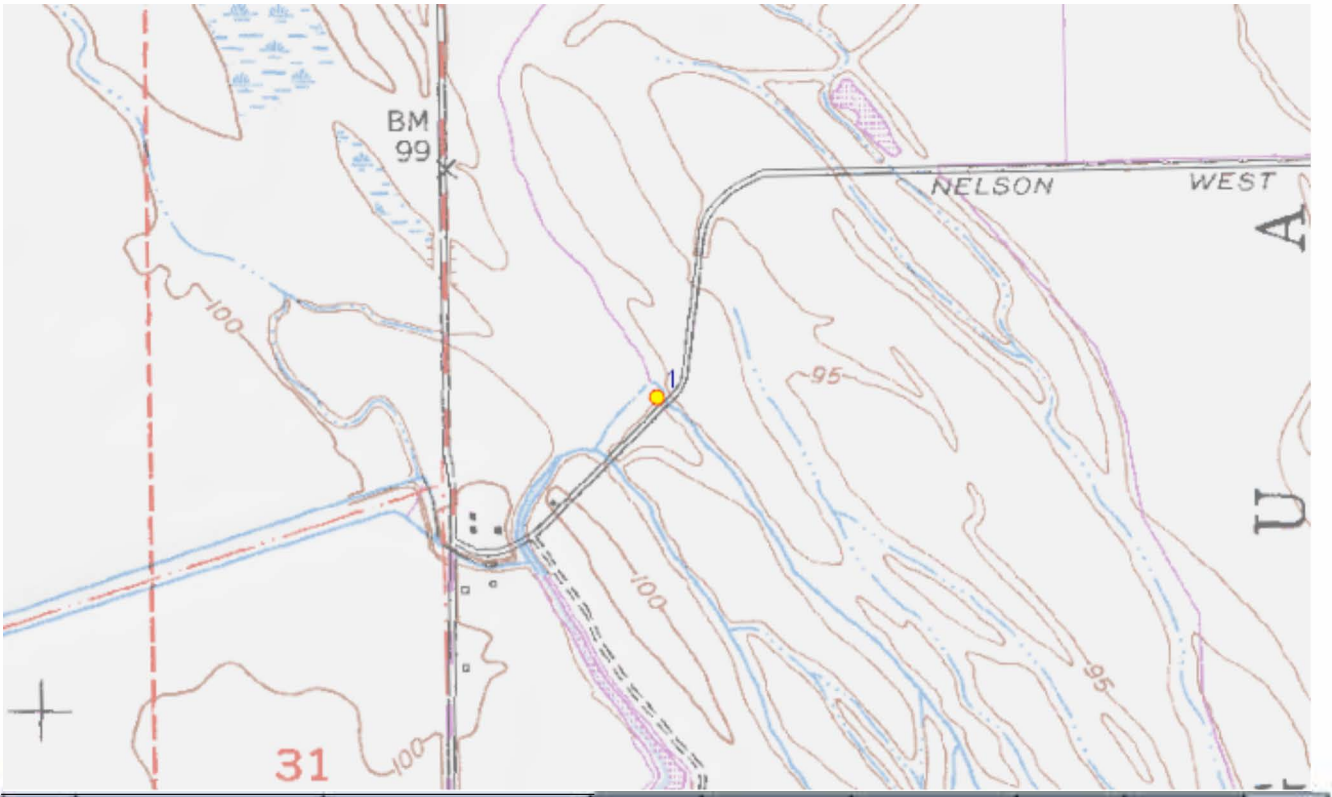
Immediate & surrounding land use:

Visible disturbances: None

Threats:

General comments:

MAP INFORMATION



ID	County	24K Quadrangle	Elev. (ft)	Latitude NAD83	Longitude NAD83	UTM E NAD83	UTM N NAD83	UTM Zone
	Butte	Llano Seco	94	39.54713	-121.90359	594205	4378069	10
1	**Public Land Survey**	**Feature Comment**						
	M T20N R01E 31							

The mapped feature is accurate within: 10 m

Source of mapped feature: Aerial Photograph

Mapping notes:

Location/directions comments:

Attachment(s):

Attachment F
Photographs

Photograph 1
View looking northeast of Nelson Road through the riparian forest (July 25, 2023).

Photograph 2
View looking southwest with forested wetland on the left and Little Butte Creek on the right (July 25, 2023).

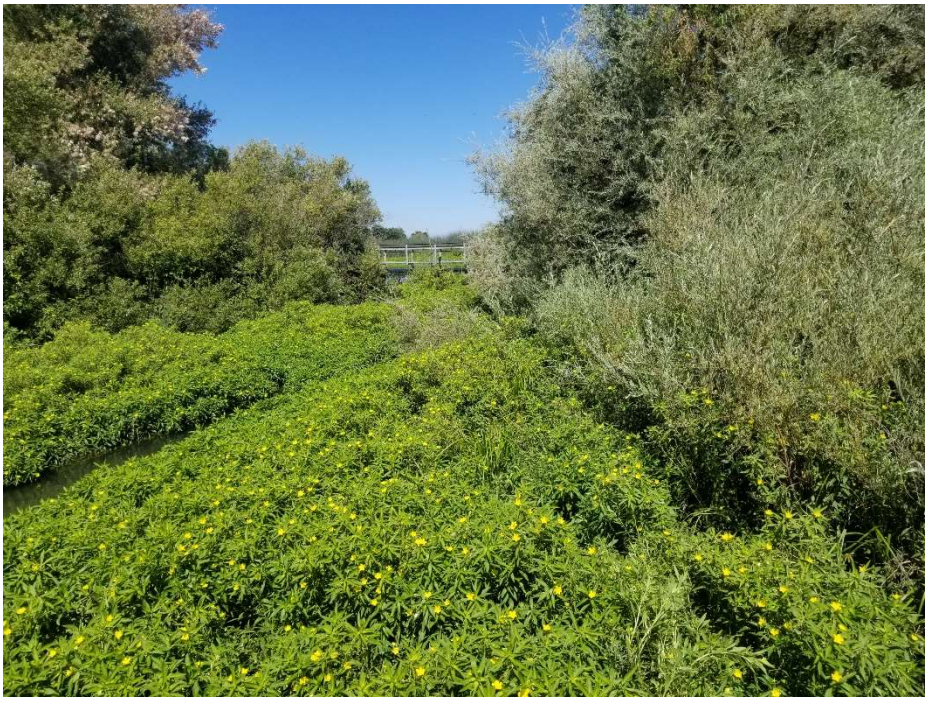
Photograph 3
View looking northeast of the slide gates (July 25, 2023).

Photograph 4
View looking northeast of the grassland. Nelson Road is on the right (July 25, 2023).

Photograph 5
View of woolly rose-mallow plants (arrows) in the southwest end of the emergent wetland (July 25, 2023).

Photograph 6
View of woolly rose-mallow plants (arrows) in the northeast end of the emergent wetland (July 25, 2023).

Photograph 7
View of a woolly rose-mallow plant in bloom (arrow) in the riparian forest (July 25, 2023).



Photograph 8
View looking northwest of Little Butte Creek, below the slide gates, from Nelson Road. Bristly sedge is growing in the thick Uruguayan water primrose but is difficult to see (July 25, 2023).

Photograph 9
A close-up of bristly sedge (arrow) in the same location as Photograph 8 (July 25, 2023).

Appendix C
Mitigation Monitoring and Reporting Program

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Overview

Public Resources Code Section §21081.6(a)(1)) and the California Environmental Quality Act (CEQA) Guidelines Section 15097 require public or lead agencies to establish monitoring or reporting programs for projects approved by a public agency whenever approval involves the adoption of either a mitigated negative declaration or specified environmental findings related to environmental impact reports.

A public or lead agency adopting measures to mitigate or avoid the significant impacts of a proposed project is required to ensure that the measures are fully enforceable, through permit conditions, agreements, or other means (Public Resources Code Section 21081.6(b)). The mitigation measures required by a public or lead agency to reduce or avoid significant project impacts not incorporated into the design or program for the project may be made conditions of project approval as set forth in a Mitigation Monitoring and Reporting Program (MMRP). The program must be designed to ensure project compliance with mitigation measures during project implementation.

The following is the MMRP for the Front Slide Gates Replacement Project, for which the Western Canal Water District (WCWD) is the lead agency under CEQA. The MMRP includes the mitigation measures identified in the Front Slide Gates Replacement Project Initial Study/Mitigated Negative Declaration (ISMND) that are required to address the potentially significant impacts associated with the proposed Project. The required mitigation measures are summarized in this program; the full text of the impact analysis and mitigation measures are presented in the ISMND.

Format of the MMRP

The MMRP is organized in a table format (see Table 1), keyed to each mitigation measure. Only mitigation measures adopted to address significant impacts are included in this program. Each mitigation measure is set out in full, followed by a tabular summary of monitoring requirements. The column headings in the tables are defined as follows:

- **Mitigation Measures:** This column identifies the mitigation measures associated with the impacts identified in the ISMND.
- **Implementation Responsibility:** This column contains an assignment of responsibility for implementation of the mitigation measure.
- **Monitoring and Reporting Action:** This column contains an outline of the appropriate steps to verify compliance with the mitigation measure.
- **Timing of Implementation:** The general schedule for conducting each monitoring and reporting task, identifying where appropriate both the timing and the frequency of the action.

Enforcement

All mitigation measures for significant impacts must be carried out in order to fulfill the requirements of approval. All mitigation measures would be checked on plans, in reports, and in the field prior to construction. Most of the remaining mitigation measures would be implemented during the new construction, demolition, and renovations of the Project.

TABLE 1
MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Implementation Responsibility	Timing of Implementation
Air Quality		
Mitigation Measure AQ-1: Implement Standard Air Quality Construction Mitigation Measures. During all phases of construction, the following procedures shall be implemented: • Prepare and Implement a Fugitive Dust Control Plan. • The contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained prior to and for the duration of onsite operation. • Limiting idling time to 5 minutes – saves fuel and reduces emissions. (State idling rule: commercial diesel vehicles – 13 CCR Chapter 10 Section 2485 effective 02/01/2005; off-road diesel vehicles – 13 CCR Chapter 9 Article 4.8 Section 2449 effective 05/01/2008). • Portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, may require California Air Resources Board (CARB) Portable Equipment Registration with the State or a local district permit. The owner/operator shall be responsible for arranging appropriate consultations with the ARB or the District to determine registration and permitting requirements prior to equipment operation at the site.	Construction contractor	Duration of Project construction.
Biological Resources		
Mitigation Measure BIO-1: Worker Environmental Awareness Protections Training. A qualified biologist will conduct a pre-construction Worker Environmental Awareness Protections Training (WEAP) for all activities. WEAP trainings are project-specific and cover potential environmental concerns or considerations, including, but not limited to, awareness of biological resources, special status species near project sites, jurisdictional waters, cultural resources, environmentally sensitive areas, and/or avoidance areas.	Construction contractor	Prior to Project construction.
Mitigation Measure BIO-2: Avoid and Minimize Effects on Sensitive Habitat.	Project applicant, construction contractor	Prior to, during, and after Project construction.

Mitigation Measure	Implementation Responsibility	Timing of Implementation
During construction, design and or refinement of proposed project activities would be implemented to reduce impacts on sensitive habitat to the extent practicable. Refinements implemented to reduce the loss of riparian and wetland/waters habitat would include reducing the impact footprint, locating staging and access areas to avoid impacts to riparian and wetland/waters habitat, and constructing within the existing disturbed areas of the Proposed Project. Where practicable, trees would be avoided and not impacted by rock slope protection or other construction efforts. Pesticide and herbicide use should be avoided if possible and restricted to use in both location and timing per the USFWS Western Monarch Butterfly Conservation Recommendations. Temporary and permanent impacts to riparian habitat and wetland/waters that cannot be mitigated through avoidance, minimization, or remediation will be mitigated to ensure no net loss through compensation, by restoring riparian and wetlands/waters habitat onsite or at an approved offsite location, mitigation bank, or in-lieu fee program. Riparian and wetlands/waters habitat will not be restored where it would be removed by future maintenance activities. A revegetation plan would be prepared by a qualified biologist or landscape architect and reviewed by the appropriate agencies. The revegetation plan would specify the use of beneficial native plants appropriate for each area that provide a diverse variety of grasses and forbs that support native wildlife species such as the Crotch's bumble bee, monarch butterflies, and nesting birds. Seeds and plants should be native and insecticide-free and sourced from local distributors. They should include flowering plants that bloom in early spring through late fall.		
Mitigation Measure BIO-3: Avoid and Minimize Effects on Rare Plants. Bristly-sedge and woolly rose-mallow plants identified during rare-plant surveys would be marked or fenced off as an avoided area during construction if they occur outside of the construction footprint. A qualified biologist would establish a buffer of at least 25 feet around the plants. If a buffer of 25 feet is not possible, the maximum distance possible would be fenced off as a buffer. Bristly sedge is located within the construction footprint and cannot be fully avoided during construction. A detailed relocation and mitigation/conservation plan that includes long-term strategies for the conservation of the species should be developed in coordination with CDFW. Bristly sedge seeds shall be collected and/or live plants shall be propagated or replanted within areas temporarily disturbed after construction is completed as agreed upon by CDFW. Herbicides would not be used within 3 meters (10 feet) of a known bristly-sedge or woolly rose-mallow plant. All chemicals would be applied using a backpack sprayer or similar direct application method.	Project applicant, construction contractor	Prior to, during, and after Project construction.
Mitigation Measure BIO-4: Bumble Bee Avoidance and Minimization. Before construction activities, a qualified biologist would conduct a pre-construction survey, during the flight period for worker and male bees late March through September,	Project applicant, construction contractor	Prior to and during Project construction.

Mitigation Measure	Implementation Responsibility	Timing of Implementation
within the construction disturbance area for active Crotch's bumble bee nests. If an active bumble bee nest is located, recommendations for avoiding or minimizing disturbance of the colony would be developed (e.g., establishing a buffer surrounding entry/exits and avoiding direct disturbance).		
Mitigation Measure BIO-5: Giant Garter Snake Avoidance, Minimization, and Mitigation. The Proposed Project area provides quality habitat for giant garter snake. Thus, WCWD proposes to implement standard avoidance and minimization measures during construction activities. The following measures shall be implemented to avoid impacts to giant garter snake: **Avoidance and Minimization Measures:** • WCWD should retain a Designated Biologist responsible for monitoring all project activities, including construction and any ground- or vegetation-disturbing activities. The Designated Biologist should be knowledgeable and experienced in the biology and natural history of GGS. The Designated Biologist should be authorized to stop project activities, if necessary to protect GGS. If directed by the Designated Biologist, WCWD should take appropriate actions to ensure project activities are safely suspended and notify CDFW. Work should not re-initiate until WCWD has consulted with CDFW and can demonstrate compliance with CESA. • For site access confine heavy equipment to existing roadways to minimize habitat disturbance. Maintain a speed limit of 10 mph on all roadways within the construction area. • Check under all equipment and materials prior to moving them. When feasible, do not store construction materials or stockpiles within 200 feet of giant garter snake habitat. If materials need to be stored within 200 feet of giant garter snake habitat exclusion fencing shall be installed to prevent snakes from accessing the stockpiled materials or the active construction site. • All construction activities that occur within 200 feet of giant garter snake habitat shall occur between May 1 and October 1. This is the active period for giant garter snakes and direct mortality is lessened, because snakes are expected to actively move and avoid danger. • WCWD shall dewater construction areas potentially providing aquatic habitat for giant garter snakes to the extent feasible. Any dewatered aquatic habitat shall remain absent of aquatic prey for at least 5 consecutive days before conducting construction activities. If 5 consecutive days is not feasible then WCWD shall consult with the USFWS and CDFW to apply appropriate measures. If dewatering cannot remove all water, potential giant garter snake prey (i.e., fish and tadpoles) would be removed so that giant garter snakes and other wildlife are not attracted to the construction area.	Project applicant, construction contractor	Prior to, during, and after Project construction.

Mitigation Measure	Implementation Responsibility	Timing of Implementation
• Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided giant garter snake habitat within or adjacent to the Proposed Project area as Environmentally Sensitive Areas. • 24-hours prior to construction activities, the Proposed Project area shall be surveyed for giant garter snakes. Surveys of the Proposed Project area shall be repeated if a lapse in construction activity of 2 weeks or greater has occurred. • If a giant garter snake is observed in the construction area, work will stop in the vicinity of the snake and allow the snake to leave on its own. Alternatively, qualified individuals approved to handle and relocate giant garter snake—i.e., individuals who possess appropriate federal and California permits for these activities—may capture and relocate the snake. USFWS and CDFW will be notified by telephone or email within 24 hours of a giant garter snake observation in the construction area. If the snake does not voluntarily leave the construction area and cannot be effectively captured and relocated unharmed (e.g., if the snake retreats into an underground burrow or below the water surface), activities in the immediate vicinity of the snake will stop as needed to prevent harm to the snake and USFWS and CDFW will be consulted. After completion of construction activities, all temporary construction debris and materials shall be removed, and habitat would be restored to pre-Project conditions. • To prevent giant garter snakes from becoming entangled, trapped, or injured, erosion control materials that use plastic or synthetic monofilament netting will not be used in the Project area. Acceptable materials include natural fibers such as jute, coconut, twine, or other similar fibers. **Compensatory Mitigation:** To compensate for temporary and permanent loss of giant garter snake habitat associated with the installation of the new facilities, WCWD will remove non-native vegetation within the Proposed Project area that prohibits giant garter snake movement and foraging, restore areas of temporary impacts to pre-project conditions, use bank stabilization methods that are compatible with giant garter snake, and remove the existing facilities. Additionally, WCWD will either purchase mitigation credits at an approved bank or restore additional habitat outside of the proposed project area at a minimum of 3:1 ratio for permanent aquatic impacts, a 2:1 ratio for permanent upland impacts, and a 1:1 ratio for temporary upland and aquatic impacts.		
Mitigation Measure BIO-6: Northwestern Pond Turtle Avoidance and Minimization. WCWD shall implement the following measures to avoid and minimize effects on northwestern pond turtle: • A qualified biologist shall conduct a pre-construction survey within 3 days before the start of Project activities. If no northwestern pond turtles are observed, WCWD would document that information for the file, and no additional measures shall be required, except as described below for dewatering activities.	Project applicant, construction contractor	Prior to and during Project construction.

Mitigation Measure	Implementation Responsibility	Timing of Implementation
• Should any northwestern pond turtles be detected on land during the pre-construction survey, the qualified biologist would identify the location using GPS coordinates. The qualified biologist may relocate any northwestern pond turtles found on land or in aquatic habitat within the construction footprint to suitable aquatic habitat at least 200 feet away from the construction footprint. • If northwestern pond turtles are observed on land within the construction footprint during construction activities, WCWD would stop work within approximately 200 feet of the turtle, and a qualified biologist would be notified immediately. If possible, the turtle would be allowed to leave on its own and the qualified biologist would remain in the area until the biologist deems his or her presence no longer necessary to ensure that the turtle is not harmed. Alternatively, the qualified biologist may capture and relocate the turtle unharmed to suitable habitat at least 200 feet outside the construction footprint. If a northwestern pond turtle nest is unintentionally uncovered during construction activities, work would stop in the vicinity of the nest until a qualified biologist could evaluate the situation and notify the appropriate agencies.		
Mitigation Measure BIO 7: Avoid and Minimize Effects on Nesting Birds. To avoid and minimize effects on nesting birds, WCWD would implement the following measures: • Where feasible, construction and maintenance activities that have the potential to affect special-status nesting birds and common nesting birds would occur at times of the year when adverse effects on those species would be avoided. If activities are conducted outside the nesting seasons, typically February 1 to September 15, and no nesting is observed, no additional measures are required to mitigate adverse effects on nesting birds. • If construction occurs during the nesting season, February 1 to September 15, a breeding season survey for nesting birds, including the yellow-billed cuckoo, would be conducted within 72 hours of the start of construction by a qualified biologist for all vegetation to be removed or disturbed that are located within 1500 feet (excluding Swainson's hawks, see below) of construction activities, including grading. • For Swainson's hawks, an area with a radius of 0.5 mile from construction activities would be surveyed for Swainson's hawk nests. Swainson's hawk surveys would be completed during at least two of the following survey periods: January 1 to March 20, March 20 to April 5, April 5 to April 20, and June 10 to July 30. No fewer than three surveys would be completed in at least two survey periods, and at least one of these surveys would occur immediately before project initiation. • Western burrowing owl surveys would follow suggested guidelines set forth in CDFW's Staff Report on Burrowing Owl Mitigation such as conducting three or	Project applicant, construction contractor	Prior to and during Project construction.

Mitigation Measure	Implementation Responsibility	Timing of Implementation
more daytime survey visits at least 3 weeks apart during the peak of breeding season from April 15 to July 15 and prior to the start of construction. • Other migratory bird nest surveys could be conducted concurrent with Swainson's hawk surveys, with at least one survey to be conducted no more than 72 hours from the initiation of project activities to confirm the absence of nesting. If the biologist determines that the area surveyed does not contain any active nests, construction activities, including removal or pruning of trees and shrubs, could commence without any further mitigation. If at any time during the nesting season construction stops for a period of 2 weeks or longer, pre-construction surveys would be conducted before construction resumes. • If nesting birds have been identified within or adjacent to the construction footprint, WCWD would establish avoidance buffers as indicated in Table 3.4 3 in Section 3.4 Biological Resources. Reduced buffers may be implemented if recommended by the monitoring biologist and approved by the qualified biologist. Buffers would be marked in the field by a qualified biologist using temporary fencing, high-visibility flagging, or other means that are equally effective in clearly delineating the buffers. • If nesting cuckoos are located the USFWS and CDFW will be contacted to establish appropriate buffers to prevent disturbance of nesting cuckoos during construction. If at any time during the nesting season construction stops for a period of two weeks or longer, pre-construction surveys shall be conducted prior to construction resuming. • To minimize and avoid the potential indirect impacts to sandhill crane that may occur within or adjacent to the Proposed Project area between September 15 through March 15, during roosting season, pre-activity surveys and an assessment of known roost sites shall be conducted within 0.25 mile of the Project area by a qualified biologist. If roost sites are identified within 0.25 mile of the Project area, the start of large equipment used for construction activities would be delayed to an hour after sunrise and stop an hour before sunset. • If riparian habitat is removed due to project construction it will be mitigated at a minimum of 1:1 ratio for both permanent and temporary impacts to western yellow-billed cuckoo migration habitat.		
Mitigation Measure BIO-8: Bat Avoidance and Minimization. • In advance of tree removal (no more than 6 months), a preconstruction survey for special status bats shall be conducted by a qualified biologist to characterize potential bat habitat and identify active roost sites within the Proposed Project and within a 500-foot radius of the Project footprint. Should potential roosting habitat or active bat roosts be found in trees and/or structures to be removed under the Project, the following measures shall be implemented: • Removal of trees shall occur when bats are active, approximately between the periods of March 1 to April 15 and August 15 to October 15, and outside of bat	Project applicant, construction contractor	Prior to and during Project construction.

Mitigation Measure	Implementation Responsibility	Timing of Implementation
maternity roosting season (approximately April 15 – August 31) and outside of months of winter torpor (approximately October 15 – March 1), to the extent feasible. • If bat roosting habitat is present, and activities are scheduled during the maternity season (April 15 to August 31) or the hibernation season (October 15 to March 1), the Proponent shall: 1) conduct pre-construction surveys and 2) develop a Bat Avoidance and Exclusion Plan, if applicable. • The Designated Biologist should develop a pre-construction Bat Survey Plan (BSP). The BSP shall include a list of potential bat species present, survey method(s), and timing of survey(s). The BSP shall provide justification for timing and methodology of survey design (e.g., habitat characteristics, day length, average ambient air temperatures, local and seasonal conditions). The survey results shall identify: 1) the exact location of all roosting sites (location shall be adequately described and shown on a digital map with GPS coordinates), 2) the number of bats present at the time of visit (count or estimate), 3) species of bat detected, if known (include how the species was identified), and 4) the type of roost(s) [i.e., maternity, hibernaculum, night roost (rest at night while out feeding), or day roost (resting during the day)]. If bats are detected during any survey, and activities are scheduled during the maternity season (April 15 to August 31) or the hibernation season (October 15 to March 1), the Designated Biologist should develop a Bat Avoidance and Exclusion Plan (BAEP). The BAEP should include the following: • 1) A bat roost buffer, which would establish an appropriate no-disturbance buffer around bat roosts during maternity (April 15 to August 31) or hibernation (October 15 to March 1) seasons. The Designated Biologist shall clearly delineate habitat and bat roosts within the Project Site with posted signs demarking the avoidance areas using stakes, flags, and/or rope or cord. • 2) Exclusion devices, which should be installed either (1) between approximately March 1 (or when evening temperatures are above 45°F and rainfall less than ½-inch in 24 hours occurs) and April 15, prior to parturition of pups; or (2) between September 1 and October 15 (or prior to evening temperatures dropping below 45°F and onset of rainfall greater than ½-inch in 24 hours). Specific exclusion devices may include one-way doors, lights and fans, foam or steel wool. • 3) Tree trimming and/or removal guidance. Tree trimming and/or tree removal should be scheduled either (1) between approximately March 1 (or when evening temperatures are above 45°F and rainfall less than ½-inch in 24 hours occurs) and April 15, prior to parturition of pups; or (2) between September 1 and October 15 (or prior to evening temperatures dropping below 45°F and onset of rainfall greater than ½-inch in 24 hours). Additionally, trees should be removed in two steps over a period of two days. On the first day, all branches		

Mitigation Measure	Implementation Responsibility	Timing of Implementation
that do not contain roosting habitat shall be removed. The remaining portion of the tree should be removed on the second day. All branch removal will be conducted using chainsaws or similar handheld equipment. •		
Mitigation Measure BIO-9: Staging Areas and Access Routes. When working on habitats that support state and/or federally listed species, disturbance to existing grades and vegetation will be limited to the actual site of the Proposed Project and necessary access routes. Placement of all roads, staging areas, and other facilities will avoid and limit disturbance-sensitive habitats (e.g., wetland habitat, suitable habitats) as much as possible. All staging and material storage areas, including the locations where equipment and vehicles are parked overnight, will be placed outside of the flood zone of a watercourse, away from wetland habitat, and away from any other sensitive habitats. When possible, staging and access areas will be situated in areas that are previously disturbed, such as developed areas, paved areas, parking lots, areas with bare ground or gravel, and areas clear of vegetation.	Project Applicant, construction contractor	Prior to and during Project construction.
Mitigation Measure BIO-10: Fish Relocation Plan WCWD should develop a Fish Relocation Plan to address potential impacts of dewatering and diversion on stranded aquatic species. To avoid impact to any non-listed aquatic species, the Aquatic Species Relocation Plan should be submitted to CDFW for approval at least 60 calendar days prior to the start of any in-water project activities. The Aquatic Species Relocation Plan should address the monitoring of the fish to be relocated during the dewatering process.		
Cultural Resources		
Mitigation Measure CUL 1: Cultural Resources Awareness Training. Before any ground-disturbing and/or construction activities, an archaeologist meeting, or under the supervision of an archaeologist meeting, the Secretary of the Interior's Professional Qualifications Standards (SOI PQS) for Archeology shall conduct a training program for all construction and field personnel involved in Project-related ground-disturbing activities. If a California Native American Tribe expresses interest, they shall be invited to participate in the training program. On-site personnel shall attend the training prior to commencement of any ground-disturbing activities. The training shall outline the general archaeological sensitivity of the Proposed Project Area and the procedures to follow in the event an archaeological resource and/or human remains are inadvertently discovered. Documentation of the training attendance shall be maintained by WCWD.	Construction contractor	Prior to Project construction.
Mitigation Measure CUL-2: Implement Inadvertent Discovery Protocol for Archaeological Resources, including Potential Tribal Cultural Resources. If pre-contact or historic-era archaeological resources are encountered by construction personnel during Proposed Project construction, all construction activities within 100 feet shall halt until a qualified archaeologist, defined as one meeting the SOI PQS for	Construction contractor	During Project construction.

Mitigation Measure	Implementation Responsibility	Timing of Implementation
Archeology and with expertise in California archaeology, can assess the significance of the find. Pre-contact archaeological materials might include: obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (midden) containing fire-affected rock, artifacts, or shellfish remains; groundstone artifacts (e.g., mortars, pestles, handstones); and battered stone tools, such as hammer stones and pitted stones. Historic-era materials might include: stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. If the qualified archaeologist determines that the resource is or is potentially Native American in origin, culturally and geographically affiliated California Native American Tribes shall be contacted to assess the find and determine whether it is potentially a tribal cultural resource. If WCWD determines, based on recommendations from the qualified archaeologist and California Native American Tribes that are traditionally and culturally affiliated with the Proposed Project Area (if the resource is indigenous), that the resource may qualify a historical resource (as defined in CCR § 15064.5), unique archaeological resource (as defined in PRC § 21083.2[g]), or tribal cultural resource (as defined in PRC § 21074), the resource shall be avoided, if feasible. Consistent with CCR § 15126.4(b)(3), this may be accomplished through: planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement. If avoidance of the resource is not feasible, WCWD shall continue to consult with California Native American Tribes that are traditionally and culturally affiliated with the Proposed Project Area (if the resource is indigenous) and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource pursuant to PRC § 21083.2 and CCR § 15126.4. This shall include documentation of the resource and may include data recovery (according to PRC § 21083.2), if deemed appropriate, or other actions such as treating the resource with culturally appropriate dignity and protecting the cultural character and integrity of the resource (according to PRC § 21084.3). Any technical report developed to document the implementation mitigation shall be submitted to CHRIS upon WCWD and approval, unless the document contains information that California Native American Tribes involved in the development of the mitigation deem should not be filed with CHRIS, in which case, the report shall be submitted to the NAHC. If, during Proposed Project implementation, WCWD determines that portions of the Proposed Project Area may be sensitive for archaeological resources or tribal cultural resources, WCWD may authorize construction monitoring of these locations by an archaeologist and Tribal Monitor. Any monitoring by a Tribal Monitor shall be done under agreements between WCWD and culturally and geographically affiliated California Native American Tribes.		
Geology and Soils		
Mitigation Measure GEO-2: Implement Appropriate Treatment Measures in Case of a Potential Fossil Discovery. If construction or other Project personnel discover any potential fossils during construction, regardless of the depth of work or location, work at the discovery location shall cease	Construction contractor	During Project construction.

Mitigation Measure	Implementation Responsibility	Timing of Implementation
within a 50-foot radius of the discovery until a qualified paleontologist has assessed the discovery and recommended the appropriate treatment. If the find is deemed significant, it shall be salvaged following the standards of the SVP and curated with a certified repository.		
Tribal Cultural Resources		
Mitigation Measure CUL 1: Cultural Resources Awareness Training.	Construction contractor	Prior to Project construction.
Mitigation Measure CUL-2: Implement Inadvertent Discovery Protocol for Archaeological Resources, including Potential Tribal Cultural Resources.	Construction contractor	During Project construction.