

SUTTER BYPASS PUMPING PLANT REHABILITATION PROJECT

Initial Study/Notice of Intent to Adopt a Mitigated Negative
Declaration

Prepared for
California Department of Water Resources

January 2020



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Initial Study/Notice of Intent to Adopt a Mitigated Negative Declaration

Prepared for
California Department of Water Resources
Division of Flood Management
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January 2020



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NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION AND AVAILABILITY OF INITIAL STUDY FOR THE SUTTER BYPASS PUMPING PLANT REHABILITATION PROJECT

The California Department of Water Resources (DWR) has directed the preparation of an initial study (IS) for the Sutter Bypass Pumping Plant Rehabilitation Project (proposed project) and intends to adopt a proposed mitigated negative declaration (MND) for the proposed project, in compliance with the California Environmental Quality Act (CEQA) and the CEQA Guidelines. DWR is the CEQA lead agency for the proposed project.

Project Location: Along the landside of the East Levee of the Sutter Bypass in Sutter County, California, at Pumping Plant Nos. 1, 2, and 3, at Levee Miles 19.3, 11, and 3.5, respectively.

Project Description: The proposed project consists of retrofitting maintenance structures at three separate pumping plants along the East Levee of the Sutter Bypass in Sutter County. These plants, originally built and operated by DWR since 1924 in accordance with Water Code Section 8361, convey drainage from Yuba City and surrounding lands into the Sutter Bypass. In 1936, DWR constructed new pumping plants adjacent to the original pumping plants, which have been abandoned and are used only for their gravity-draining function. Construction work would occur in two phases: one phase focused on the gravity drain system at each pumping plant, and the other focused on the pumping plants' intake basins. Proposed project activities include:

- Geotechnical investigations to support the final design (preconstruction)
- Demolition of the abandoned control buildings at Pumping Plant Nos. 1 and 2 to allow access to the gravity drainpipe inlets (Phase 1)
- Extension of the gravity pipes, replacement of the damaged trash rack systems of the gravity drain pipes, weir/stop log structures, and an automated screw gate system at all three pumping plants (Phase 1)
- Levee reconstruction and partial filling of the old sump basin at Pumping Plant No. 3 (Phase 1)
- Construction of new weir/stop log structures at the inlet of each pumping plant to enable future inspection and maintenance of the pumping plant trash racks and inlet basins (Phase 2)

Project construction would occur over two construction seasons, each beginning no earlier than May 1 and ending before October 2. If work were to occur outside this period, it would be subject to the constraints identified in Mitigation Measure BIO-16 to reduce project impacts on giant garter snake (*Thamnophis gigas*), which is federally listed and State-listed as threatened.

Environmental Review Process: DWR has directed the preparation of an IS/MND on the proposed project in accordance with the requirements of CEQA and the CEQA Guidelines. The IS/MND describes the proposed project and provides an assessment of the proposed project's potentially significant adverse impacts on the physical environment. The IS found that the proposed project would not have any significant adverse effects on the environment after adoption and implementation of mitigation measures.

Public Review Period: The IS/MND is being circulated for public review and comment for a review period of 30 days from release of the document to the State Clearinghouse, starting on January 30, 2020. Written comments must be submitted to and received at the following address no later than close of business (**5:00 p.m.**) on **February 29, 2020**:

Mitra Emami
California Department of Water Resources
Division of Flood Management
3110 El Camino Avenue, Room 140
Sacramento, CA 95821

Email: Mitra.Emami@water.ca.gov
Fax: (916) 574-0331

PROPOSED MITIGATED NEGATIVE DECLARATION

Project Title: Sutter Bypass Pumping Plant Rehabilitation Project

Lead Agency: California Department of Water Resources (DWR)

Project Location: Along the landside of the East Levee of the Sutter Bypass in Sutter County, California, at Pumping Plant Nos. 1, 2, and 3, at Levee Miles 19.3, 11, and 3.5, respectively

Project Description: The Sutter Bypass Pumping Plant Rehabilitation Project (proposed project) consists of retrofitting maintenance structures at three separate pumping plants along the East Levee of the Sutter Bypass in Sutter County. These plants, originally built and operated by DWR since 1924 in accordance with Water Code Section 8361, convey drainage from Yuba City and surrounding lands into the Sutter Bypass. In 1936, DWR constructed new pumping plants adjacent to the original pumping plants, which have been abandoned and are used only for their gravity-draining function. Construction work would occur in two phases: one phase focused on the gravity drain system at each pumping plant, and the other focused on the pumping plants' intake basins. Proposed project activities include:

- Geotechnical investigations to support the final design (preconstruction)
- Demolition of the abandoned control buildings at Pumping Plant Nos. 1 and 2 to allow access to the gravity drainpipe inlets (Phase 1)
- Extension of the gravity pipes, replacement of the damaged trash rack systems of the gravity drain pipes, weir/stop log structures, and an automated screw gate system at all three pumping plants (Phase 1)
- Levee reconstruction and partial filling of the old sump basin at Pumping Plant No. 3 (Phase 1)
- Construction of new weir/stop log structures at the inlet of each pumping plant to enable future inspection and maintenance of the pumping plant trash racks and inlet basins (Phase 2)

Project construction would occur over two construction seasons, each beginning no earlier than May 1 and ending before October 2. If work were to occur outside this period, it would be subject to the constraints identified in Mitigation Measure BIO-16 to reduce project impacts on giant garter snake (*Thamnophis gigas*), which is federally listed and State-listed as threatened.

Findings: The proposed project would result in no impact on the following resource topics:

- Land Use and Planning
- Population and Housing
- Public Services
- Recreation

The proposed project would result in less-than-significant impacts on the following resource topics:

- Aesthetics
- Agriculture and Forestry Resources
- Energy
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Mineral Resources
- Noise
- Transportation
- Utilities and Service Systems
- Wildfire

The proposed project would result in less-than-significant impacts on the following resource topics following incorporation of mitigation measures into the project:

- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Tribal Cultural Resources
- Mandatory Findings of Significance

Mitigation Measures: DWR would implement the mitigation measures listed below.

- Mitigation Measure AQ-1: Implement FRAQMD Standard Mitigation Measures for the Construction Phase
- Mitigation Measure BIO-1: Perform Preconstruction Surveys for Special-Status Plants
- Mitigation Measure BIO-2: Avoid Special-Status Plants during Project Construction
- Mitigation Measure BIO-3: Train Maintenance Personnel about Special-Status Plants
- Mitigation Measure BIO-4: Maintain a Qualified Biologist On Call or On-Site if Special-Status Plants Occur
- Mitigation Measure BIO-5: Coordinate with CDFW if Avoidance and Transplantation of Special-Status Plants is Not Feasible
- Mitigation Measure BIO-6: Present Environmental Awareness Training for GGS to Construction Personnel
- Mitigation Measure BIO-7: Minimize Vegetation Clearing and Ground Disturbance
- Mitigation Measure BIO-8: Stage Vehicles and Equipment in Existing Staging Areas
- Mitigation Measure BIO-9: Inspect Areas under Vehicles and Heavy Equipment for GGS
- Mitigation Measure BIO-10: Deposit Spoils in Areas that Do Not Provide GGS Habitat
- Mitigation Measure BIO-11: Monitor Spoils Disposal to Ensure Avoidance of Biologically Sensitive Areas
- Mitigation Measure BIO-12: Conduct Pre-activity Surveys for GGS before Grading Spoils Piles

- Mitigation Measure BIO-13: Avoid and Protect Individual GGS Found during Work
- Mitigation Measure BIO-14: Avoid Using Materials that May Entangle Snakes
- Mitigation Measure BIO-15: Remove Refuse
- Mitigation Measure BIO-16: Time Ground-Disturbing Work Relative to the Active Season for GGS
- Mitigation Measure BIO-17: Conduct Preconstruction Surveys for GGS and Delineate Biologically Sensitive Areas in Uplands
- Mitigation Measure BIO-18: Monitor Work in Aquatic Habitat for GGS
- Mitigation Measure BIO-19: Operate Excavators to Minimize Disturbance of GGS in the Active Season
- Mitigation Measure BIO-20: Dewater Habitat
- Mitigation Measure BIO-21: Restore Temporarily Disturbed Habitat to Pre-project Conditions
- Mitigation Measure BIO-22: Install, Inspect, and Maintain GGS Fencing
- Mitigation Measure BIO-23: Facilitate USFWS and CDFW Staff Visits
- Mitigation Measure BIO-24: Retain a Qualified Biologist to Be Present during All Initial Ground Disturbance and Regularly Inspect the Project Area for the Presence of GGS
- Mitigation Measure BIO-25: Dispose of Diesel Fuel and Oil Properly
- Mitigation Measure BIO-26: Prevent Soil and/or Water Contamination
- Mitigation Measure BIO-27: Use a Turbidity Curtain
- Mitigation Measure BIO-28: Place Excavated Materials in Upland Areas
- Mitigation Measure BIO-29: Obtain and Comply with an Incidental Take Permit
- Mitigation Measure BIO-30: Conduct Worker Education for Western Pond Turtle
- Mitigation Measure BIO-31: Conduct Preconstruction Survey for Western Pond Turtle
- Mitigation Measure BIO-32: Relocate Western Pond Turtles
- Mitigation Measure BIO-33: Stop Work if Western Pond Turtles Are Found in the Project Area
- Mitigation Measure BIO-34: Establish Work Window for Nesting Birds
- Mitigation Measure BIO-35: Prevent Establishment of Cliff Swallow Nests
- Mitigation Measure BIO-36: Conduct Worker Education if Active Nests Are Found
- Mitigation Measure BIO-37: Establish Avoidance Buffers around Active Bird Nests

- Mitigation Measure BIO-38: Monitor Project Activities that May Affect Nesting Birds
- Mitigation Measure BIO-39: Conduct Preconstruction Surveys for Burrowing Owl
- Mitigation Measure BIO-40: Establish Buffer around Burrowing Owls and Active Burrows
- Mitigation Measure BIO-41: Monitor Active Burrowing Owl Burrows if They Cannot be Avoided with the Minimum Buffers
- Mitigation Measure BIO-42: Consult with CDFW if Complete Avoidance of Active Burrowing Owl Burrows is Not Feasible
- Mitigation Measure BIO-43: Conduct Preconstruction Surveys for Swainson's Hawk
- Mitigation Measure BIO-44: Establish Buffer between Active Swainson's Hawk Nests and Construction
- Mitigation Measure BIO-45: Monitor Construction within 0.25 Mile around Swainson's Hawk Nests
- Mitigation Measure BIO-46: Survey for and Exclude Bats
- Mitigation Measure BIO-47: Remove Board Covering Window at Pumping Plant No. 1
- Mitigation Measure BIO-48: Conduct a Preconstruction Survey for Bats
- Mitigation Measure BIO-49: Establish an Avoidance Buffer around Maternity and Hibernation Bat Roosts
- Mitigation Measure BIO-50: Exclude Bats from Structures before Construction
- Mitigation Measure BIO-51: Erect Fencing at the Edge of the Project Footprint
- Mitigation Measure CUL-1: Implement Unanticipated-Discovery Protocol for Archaeological Resources, including Potential Tribal Cultural Resources
- Mitigation Measure CUL-2: Implement Unanticipated-Discovery Protocol for Human Remains
- Mitigation Measure PALEO-1: Address Inadvertent Discovery of Paleontological Resources during Construction
- Mitigation Measure TCR-1: Implement Unanticipated-Discovery Protocol for Archaeological Resources, including Potential Tribal Cultural Resources
- Mitigation Measure TCR-2: Implement Unanticipated-Discovery Protocol for Human Remains

TABLE OF CONTENTS

Sutter Bypass Pumping Plant Rehabilitation Project Initial Study/Notice of Intent to Adopt a Mitigated Negative Declaration

	<u>Page</u>
Notice of Intent to Adopt a Mitigated Negative Declaration and Availability of Initial Study for the Sutter Bypass Pumping Plant Rehabilitation Project.....	NOI-1
Proposed Mitigated Negative Declaration	MND-1
Chapter 1, Introduction.....	1-1
1.1 Purpose of the Initial Study	1-1
1.2 Summary of Findings.....	1-2
1.3 Document Organization	1-2
Chapter 2, Project Description.....	2-1
2.1 Location and Background	2-1
2.2 Project Objectives	2-1
2.3 Description of the Proposed Project	2-3
Geotechnical Studies.....	2-7
Pumping Plant No. 1	2-7
Pumping Plant No. 2.....	2-9
Pumping Plant No. 3.....	2-10
Construction Schedule.....	2-12
Workforce and Equipment	2-13
Best Management Practices.....	2-14
Operation and Maintenance Activities	2-14
Anticipated Regulatory Permits and Approvals.....	2-14
2.4 References	2-15
Chapter 3, Initial Study and Environmental Checklist	3-1
3.1 Environmental Factors Potentially Affected	3-1
3.2 Environmental Checklist	3-3
Aesthetics	3-3
Agriculture and Forestry Resources	3-5
Air Quality	3-8
Biological Resources	3-14
Cultural Resources	3-42
Energy	3-52
Geology and Soils.....	3-55
Greenhouse Gas Emissions	3-64
Hazards and Hazardous Materials.....	3-70
Hydrology and Water Quality	3-74
Land Use and Planning	3-80

	<u>Page</u>
Mineral Resources.....	3-82
Noise	3-83
Population and Housing.....	3-89
Public Services	3-91
Recreation	3-94
Transportation	3-96
Tribal Cultural Resources	3-99
Utilities and Service Systems	3-105
Wildfire.....	3-109
Mandatory Findings of Significance	3-111

Appendices

- A. Air Quality and Greenhouse Gas Modeling Data
- B. DWR GHG Emissions Reduction Plan Consistency Determination Form
- C. Biological Resources Survey Report

List of Figures

Figure 2-1	Regional Locator Map.....	2-2
Figure 2-2	Site Plan—Pumping Plant No. 1	2-4
Figure 2-3	Site Plan—Pumping Plant No. 2	2-5
Figure 2-4	Site Plan—Pumping Plant No. 3.....	2-6
Figure 3-1	Habitat Types—Pumping Plant No. 1	3-19
Figure 3-2	Habitat Types—Pumping Plant No. 2	3-20
Figure 3-3	Habitat Types—Pumping Plant No. 3	3-21

List of Tables

Table 2-1	Proposed Project Acreages	2-3
Table 2-2	Soil Disturbance and Fill—Pumping Plant No. 1.....	2-9
Table 2-3	Soil Disturbance and Fill—Pumping Plant No. 2.....	2-10
Table 2-4	Soil Disturbance and Fill—Pumping Plant No. 3.....	2-12
Table 2-5	Phase I Construction Equipment	2-13
Table 2-6	Phase II Construction Equipment	2-13
Table 2-7	Anticipated Regulatory Requirements and Permits for Project Implementation	2-15
Table 3-1	Average Daily Construction-Related Pollutant Emissions.....	3-11
Table 3-2	Acreages of Habitat Types in the Project Area	3-16
Table 3-3	Summary of Aquatic Resources in the Project Area	3-18
Table 3-4	Regionally Occurring Special-Status Species.....	3-24
Table 3-5	Recommended Restricted Activity Dates and Setback Distances by Level of Disturbance for Burrowing Owls.....	3-37
Table 3-6	Summary of Cultural Resources in the CEQA Area of Potential Effects.....	3-45
Table 3-7	Total Estimated Greenhouse Gas Emissions from Construction	3-66
Table 3-8	Groundborne Vibration Impact Criteria for General Assessment.....	3-85
Table 3-9	Typical Noise Levels from Operation of Construction Equipment.....	3-86

Acronyms and Other Abbreviations

2018 Plan	2018 triennial update of the Northern Sacramento Valley Planning Area Air Quality Attainment Plan
°F	degrees Fahrenheit
AG	Agriculture land use designation
AG-80	Agriculture (80-Acre Minimum) land use designation
Basin Plan	<i>Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins</i>
BMP	best management practice
C-APE	California Environmental Quality Act Area of Potential Effects
CalEEMod	California Emissions Estimator Model
CAL FIRE	California Department of Forestry and Fire Protection
California Register	California Register of Historical Resources
CARB	California Air Resources Board
CBC	California Building Code
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CHRIS	California Historical Resources Information System
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent(s)
County	Sutter County
Cowardin Classification	<i>Classification of Wetlands and Deepwater Habitats of the U.S.</i>
CWA	Clean Water Act
dB	decibel(s)
dBA	A-weighted decibel(s)
DDT	dichlorodiphenyltrichloroethane
DWR	California Department of Water Resources
EPA	U.S. Environmental Protection Agency
ESA	Environmental Science Associates
FESA	Federal Endangered Species Act
FR	<i>Federal Register</i>
FRAQMD	Feather River Air Quality Management District
GGERP	<i>Climate Action Plan Phase I: Greenhouse Gas Emissions Reduction Plan</i>

GGS	giant garter snake
GHG	greenhouse gas
GWP	global warming potential
Hz	hertz
IS	initial study
MBTA	Migratory Bird Treaty Act
MND	mitigated negative declaration
NAHC	Native American Heritage Commission
ND	negative declaration
NEIC	Northeast Information Center
NOI	notice of intent
NO _x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NSVPA	Northern Sacramento Valley Planning Area
OS	Open Space land use designation
PCB	polychlorinated biphenyl
PM _{2.5}	particulate matter 2.5 microns or less in diameter
PM ₁₀	particulate matter 10 microns or less in diameter
PRC	Public Resources Code
ROG	reactive organic gases
SR	State Route
SRFCP	Sacramento River Flood Control Project
State Water Board	State Water Resources Control Board
Sutter Mutual	Sutter Mutual Water Company
SVAB	Sacramento Valley Air Basin
SVP	Society of Vertebrate Paleontology
SWPPP	storm water pollution prevention plan
TMDL	total maximum daily load
UAIC	United Auburn Indian Community of the Auburn Rancheria of California
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

CHAPTER 1

Introduction

As lead agency under the California Environmental Quality Act (CEQA), the California Department of Water Resources (DWR) has prepared this draft initial study (IS) and notice of intent (NOI) to adopt a mitigated negative declaration (MND) to address the environmental consequences of the proposed Sutter Bypass Pumping Plant Rehabilitation Project (proposed project).

The proposed project consists of retrofitting maintenance structures at three separate pumping plants along the East Levee of the Sutter Bypass, in Sutter County, California. The purpose of the proposed project is to modernize the three existing pumping plants to create a more accessible and safe environment for inspections and maintenance activities. The proposed project would be carried out by DWR's Division of Flood Management, Flood Maintenance Office.

To satisfy CEQA requirements, this document includes:

- a notice of availability and intent to adopt an IS/MND for the proposed project;
- a proposed MND; and
- an IS with a completed environmental checklist (consistent with Appendix G of the CEQA Guidelines).

Following completion of the required public comment period, and before approving the proposed project, DWR will consider the MND together with any comments provided during the public comment period. DWR 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 DWR's independent judgment and analysis. DWR will also prepare and adopt a mitigation monitoring and reporting program as part of the approval process as required under Public Resources Code Section 21081.6(c) for mitigation measures identified in the MND.

1.1 Purpose of the Initial Study

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

1.2 Summary of Findings

Based on the analysis in Chapter 3, *Initial Study and Environmental Checklist*, the proposed project would result in no impact on the following resource topics:

- Land Use and Planning
- Population and Housing
- Public Services
- Recreation

The proposed project would result in less-than-significant impacts on the following resource topics:

- Aesthetics
- Agriculture and Forestry Resources
- Energy
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Hydrology and Water Quality
- Mineral Resources
- Noise
- Transportation
- Utilities and Service Systems
- Wildfire

The proposed project would result in less-than-significant impacts on the following resource topics following incorporation of mitigation measures into the project:

- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Tribal Cultural Resources
- Mandatory Findings of Significance

1.3 Document Organization

This document is organized as follows:

Notice of Intent to Adopt an MND. The NOI to adopt an MND provides notice to responsible and trustee agencies, interested parties, and organizations of DWR's intent to adopt an MND for the proposed project.

Chapter 1, *Introduction*. This chapter introduces the proposed project and the purpose of the IS and presents a summary of findings and the organization of this document.

Chapter 2, *Project Description*. This chapter describes the proposed project, including project location, project objectives, and activities to be conducted under the proposed project. Chapter 2 also describes the permits and/or approvals that may be required before implementation of the proposed project.

Chapter 3, *Initial Study Environmental Checklist*. This chapter presents an analysis of implementation of the proposed project for the resource topics included in the CEQA Environmental Checklist (Appendix G of the CEQA Guidelines). For each resource topic

question, Chapter 3 provides the following information: (1) Environmental setting; (2) discussion of the potential effects of implementing the proposed project; (3) finding of significance; and (4) any mitigation measures to be recommended for incorporation into the proposed project to reduce identified significant impacts to a less-than-significant level. Chapter 3 also lists the references used in preparation of this IS for each resource topic.

This IS/MND is being circulated for review and comment by the public and other interested parties, agencies, and organizations for a 30-day review period. During this review period, copies of the IS/MND will be available for review at the following location during normal business hours:

California Department of Water Resources
Division of Flood Management
3110 El Camino Avenue, Room 140
Sacramento, CA 95821

In addition, copies of the IS/MND will be circulated to State agencies by the Governor's Office of Planning and Research, State Clearinghouse.

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CHAPTER 2

Project Description

2.1 Location and Background

The Sutter Bypass is a human-made flood control structure in Sutter County, California, that collects floodwaters from the north (Butte Slough, Colusa Weir, Moulton Weir, and other overflow structures), the west (the Tisdale Bypass), and the east (the Wadsworth Canal and any floodwaters from Yuba City and the Feather River) and passes them south through Fremont Weir and into the Yolo Bypass.

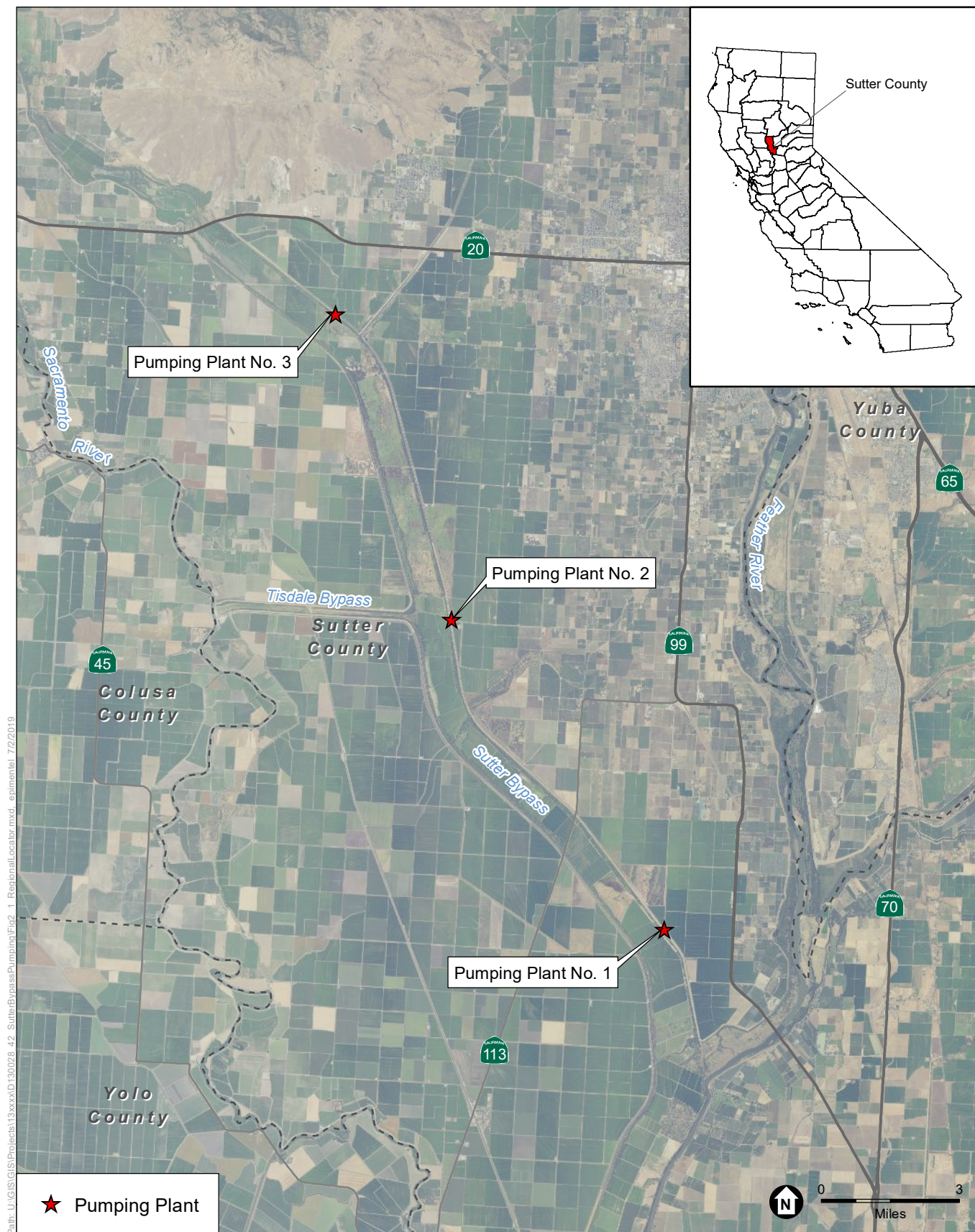
Pumping plants along the East Levee of the Sutter Bypass convey drainage from Yuba City and surrounding lands into the bypass. These plants were originally built in 1924 and operated by the California Department of Water Resources (DWR) in accordance with Water Code Section 8361. In 1936, DWR constructed new pumping plants adjacent to the original pumping plants, which have been abandoned and are used only for their gravity-draining function.

The proposed project consists of retrofitting maintenance structures at three separate pumping plants along the East Levee of the Sutter Bypass (see **Figure 2-1**) to provide safer conditions for inspections and maintenance activities. The following specific safety and accessibility concerns have been identified:

- The deteriorated trash racks associated with the gravity drains at Pumping Plant Nos. 1, 2, and 3 are currently accessible only via a narrow concrete catwalk adjacent to the abandoned control buildings, which poses a safety hazard for crews seeking to access and clear debris.
- Pumping Plant Nos. 1, 2, and 3 were constructed without a method for dewatering the intake side of the pump trash racks. As a result, the trash racks and their supports are submerged, preventing inspections, debris removal, and other required maintenance.
- The large sump basin at Pumping Plant No. 3 is a remnant from the removal of the abandoned control building. The sump currently protrudes into the levee prism and creates a deformation in the levee structure.

2.2 Project Objectives

The objective of the proposed project is to modernize the three existing pumping plants, including the gravity drain systems, to increase accessibility, provide safer conditions for inspections and maintenance activities, and restore a degraded levee prism to design standards.



SOURCE: NAIP, 2016; ESRI, 2012; ESA, 2019

Sutter Bypass Pumping Plant Rehabilitation Project

Figure 2-1
Regional Locator Map

2.3 Description of the Proposed Project

The proposed project would involve retrofitting maintenance structures at three separate pumping plants (Pumping Plant Nos. 1, 2, and 3). Proposed project activities include:

- Geotechnical investigations to support the final design (preconstruction)
- Demolition of the abandoned control buildings at Pumping Plant Nos. 1 and 2 to allow access to the gravity drainpipe inlets (Phase 1)
- Extension of the gravity pipes, replacement of the damaged trash rack systems of the gravity drain pipes, weir/stop log structures, and an automated screw gate system at all three pumping plants (Phase 1)
- Levee reconstruction and partial filling of the old sump basin at Pumping Plant No. 3 (Phase 1)
- Construction of new weir/stop log structures at the inlet of each pumping plant to enable future inspection and maintenance of the pumping plant trash racks and inlet basins (Phase 2)

The acreages for each pumping plant site are shown in **Table 2-1** and illustrated in **Figures 2-2, 2-3, and 2-4**, respectively. The table and figures include the outer boundary for each site (project area) within which all proposed work activities would occur, and the individual project elements. These elements are discussed in more detail below in the descriptions of activities at each pumping plant.

Construction work would occur in two phases: one phase focused on the gravity drain system at each pumping plant, and the other focused on the pumping plants' intake basins.

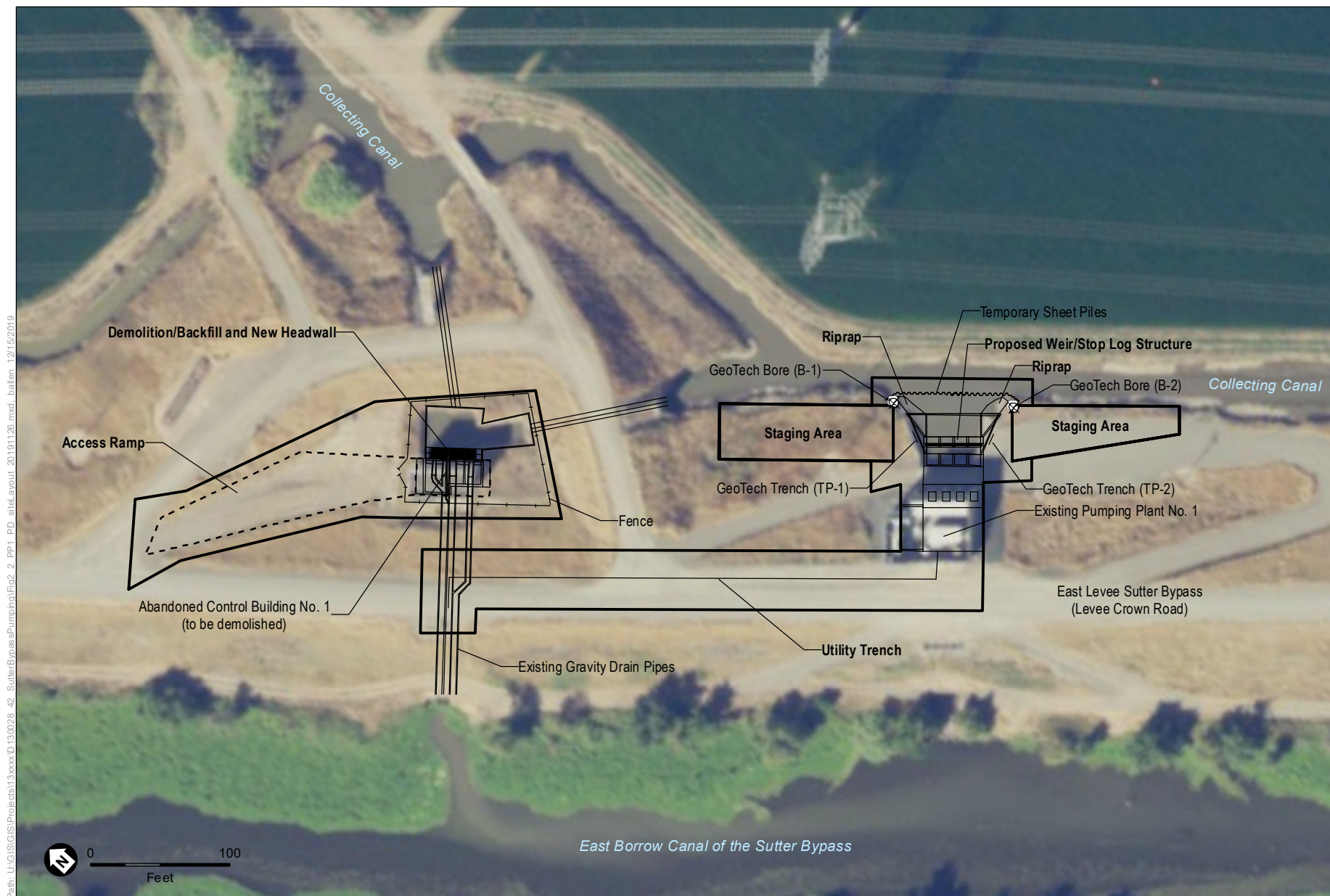
The following sections describe the proposed project elements, along with construction considerations, anticipated construction schedule, and best management practices (BMPs) that would be incorporated into the proposed project.

TABLE 2-1
PROPOSED PROJECT ACREAGES

	Pumping Plant No. 1	Pumping Plant No. 2	Pumping Plant No. 3
Total Project Area Acreage (project elements plus other areas of work activity)			
	1.35	2.86	1.43
Acreage of Individual Project Elements			
Access Ramps	0.18	0.20	—
Staging Area(s)	0.11, 0.08	0.50	0.11, 0.04
Weir/Stop Log Structure(s)	0.01	0.01	0.01, 0.01
Demolition/Backfill, and New Headwall	0.05	0.13	0.02
Utility Trench	0.09	0.07	0.05
Riprap Area(s)	0.01	0.02	0.01, 0.04
Levee Repair Slope	—	—	0.28
Backfill Sump	—	—	0.07

NOTES: Project elements are shown for Pumping Plant Nos. 1, 2, and 3 in Figures 2-2, 2-3, and 2-4, respectively. Total acreages shown are approximate due to rounding.

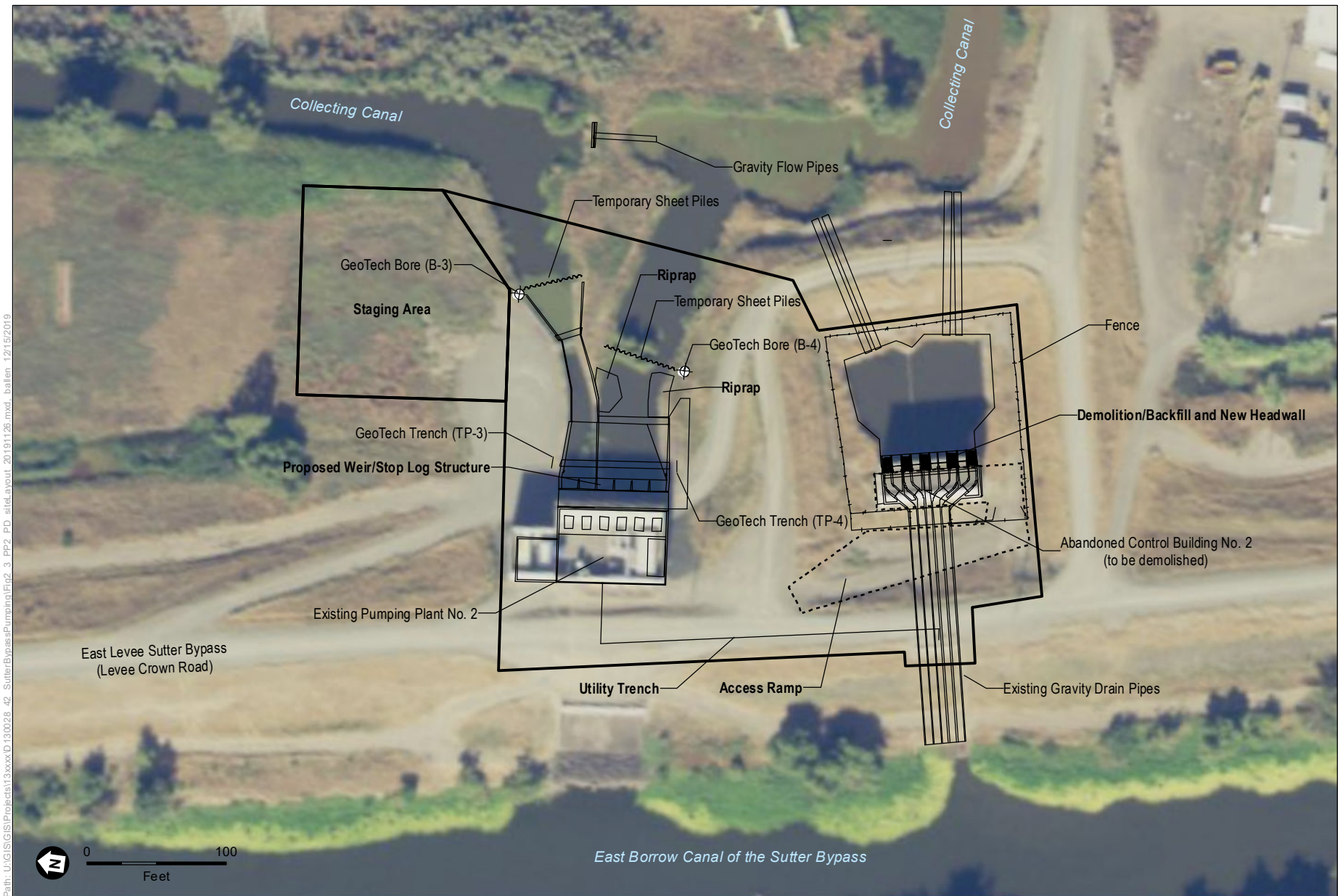
SOURCE: Data compiled by DWR in 2019



SOURCE: USDA, 2016; DWR, 2018; ESA, 20189

Sutter Bypass Pumping Plant Rehabilitation Project

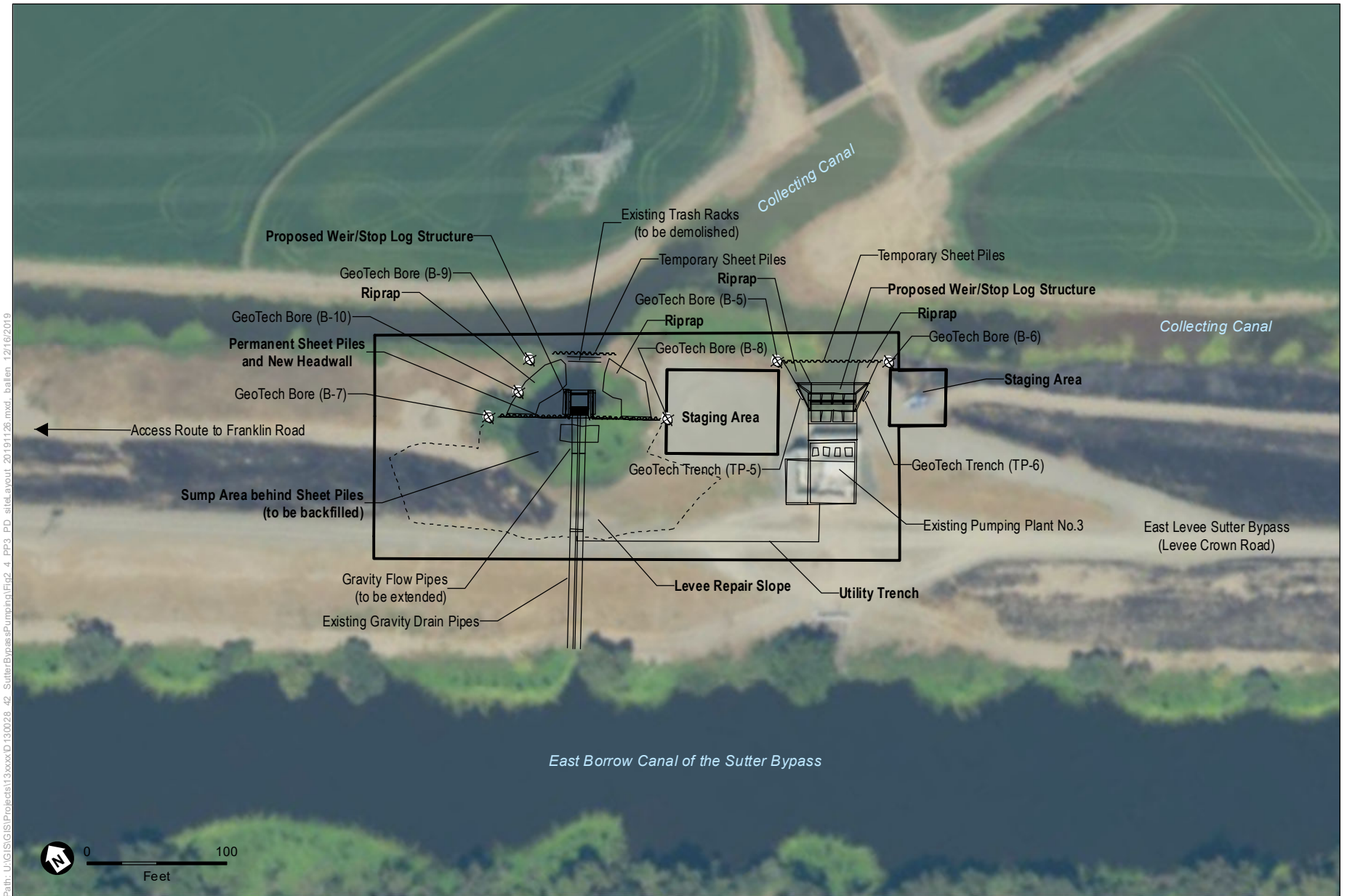
Figure 2-2
Site Plan
Pumping Plant No.1



SOURCE: USDA, 2016; DWR, 2018; ESA, 2019

Sutter Bypass Pumping Plant Rehabilitation Project

Figure 2-3
Site Plan
Pumping Plant No.2



SOURCE: USDA, 2016; DWR, 2018; ESA, 2019

Sutter Bypass Pumping Plant Rehabilitation Project

Figure 2-4
Site Plan
Pumping Plant No. 3

Geotechnical Studies

Before any construction work to finalize the design of certain structures (e.g., weir/stop log structures, sheet piles), geotechnical investigations would be performed to characterize and test the soils that would be the foundation and support for the new structures. To this end, the project proposes drilling 10 holes to a depth of 40 feet using a Geoprobe, and excavating 6 test pit trenches (2 per pumping plant site) to a depth of 12 feet, all located adjacent to structures that would be built (see Figures 2-2, 2-3, and 2-4).

Geoprobe drilling would consist of using a smaller tracked piece of equipment to drive 3-inch-diameter PVC tubing directly down into the ground to collect soil samples. Using this method typically does not leave any soil spoils. The drill holes would be tremie backfilled (filled from the bottom using a tube) with a grout-bentonite slurry. The test pit trenches would be excavated using a rubber-tired mini-excavator with a 24-inch bucket. Trenches would be excavated to dimensions of 2 feet wide by 8 feet long by 12 feet deep. The excavator would dig into the ground until the desired dimensions were met, creating a small temporary spoils pile that would be used to backfill the test pit. The mini-excavator would then be used with a sheepsfoot roller attachment to recompact the soil.

Pumping Plant No. 1

Phase I (Construction Season I): Gravity Drain Work

Staging Areas

Two staging areas, totaling 0.19 acre, would be established in an existing disturbed area along the landside of the East Levee of the Sutter Bypass at Pumping Plant No. 1 (Figure 2-2). The staging areas would be multifunctional to accommodate and support construction activities, providing access, parking, equipment and materials storage, and a construction oversight area. No grading or other ground disturbance would be required to establish the staging areas. Upon completion of construction, leftover construction materials would be removed and the staging areas would be restored to pre-project conditions.

Site Preparation

Before project construction, the concrete-lined inlet basin would be dewatered. The inlet basin would be dewatered by closing the screw gates at the pipes that connect the basin to the collecting canals, then using the gravity drains to transfer most of the basin water into the bypass. Small “trash” pumps would pump any remaining water into the adjacent collecting canals.

Once the basin has dried down, the access ramp leading down to the control building would be graded and aggregate base rock would be added, thus enabling equipment to more easily access the building for the demolition.

Demolition of Control Building

The proposed project would involve demolishing the abandoned control building. All debris from demolition of the abandoned control building would be removed from the dry inlet basin and would be hauled away to an approved commercial disposal site within 50 miles of the project area.

Extension of Gravity Drain and Trash Racks

The project proposes to remove the existing trash racks and their supporting concrete weir. The gravity drains would be extended approximately 20 feet where new trash racks and associated supports, including a new headwall, would be installed. The area formed by removal of the abandoned control building and extension of the gravity drains would be backfilled to create an all-weather gravel access pad.

Conduit Installation (Automation of Gravity Drain Gates)

The project would add automation to the refurbished gravity drain system by installing new mechanical gates and running power and communication from the pumping plant to the upgraded valve box. The existing gates would be replaced without the need to rebuild the box structure. The new gates would be automated to raise and lower electronically, depending on water elevations. The only new disturbance would be to trench in the electrical conduit running from the pumping plant's power interface up to the levee crown, then along the levee crown road to the existing valve box.

Phase II (Construction Season II): Pumping Plant Work

Site Preparation

Temporary sheet piles would be installed before dewatering of the intake basin and the start of construction. The temporary sheet piles would be installed near the mouth of the intake basin and small "trash" pumps would pump the water in the basin out to the collecting canals to dewater the areas between the pumps and the sheet piles. The basin would be allowed to dry before the start of work on the new weir/stop log structures.

Installation of Weir/Stop Log Structures

The proposed project would install new weir/stop log structures across the intake sides of the pumping plant. These structures would enable DWR's Sutter Maintenance Yard staff to temporarily block the water flow and isolate the area around the trash racks, effectively dewatering them, to allow visual inspections and maintenance of the trash racks and support structures.

Installation of the weir/stop log structures would require excavating approximately 534 cubic yards of soil and removing the existing concrete footing and apron. New concrete footings and aprons would be installed and the channel adjacent to the pump structure would be narrowed. The concrete weir/stop log structures would be poured in place with rebar, which would connect the new structures to the new concrete aprons.

Excavation and Filling

The proposed project would require the import of fill material for demolition backfilling and construction of the access ramps, staging areas, and weir/stop log structures. Excavation would occur for geotechnical studies, construction of the weir/stop log structures, and conduit installation. All fill material would be obtained from a commercial source located within 50 miles of the project area, and all excavated material would be hauled away to an approved commercial

disposal site within 50 miles of the project area. **Table 2-2** outlines the total soil disturbance and amount of fill proposed for Pumping Plant No. 1.

TABLE 2-2
SOIL DISTURBANCE AND FILL—PUMPING PLANT NO. 1

Project Element	Area Disturbed (acres)	Excavation and Demo (cubic yards)	Concrete, Slurry, and/or Aggregate Fill (cubic yards)	Backfill (Cubic Yards)
Old Pumping Plant Demolition and Backfill and New Headwall	0.05	306	338	363
Access Ramp	0.18	0	143	0
Construction of Weir/Stop Log Structures	0.01	534	138	534
Electrical Conduit Trench	0.09	104	53	53
Riprap Area	0.01	—	—	—
Total	0.34	944	672	950

SOURCE: Data compiled by DWR in 2019

Riprap Rehabilitation

To construct the new concrete apron at the intake, the existing riprap armoring would need to be removed. Once the new structures were in place and cured, the riprap would be replaced to protect the new structures. The material used for riprap would be reused to the extent possible, but would likely be augmented with new material to create an appropriate level of armoring.

Pumping Plant No. 2

Phase I (Construction Season I): Gravity Drain Work

The gravity drain work performed at Pumping Plant No. 2 would be identical to that described above for Pumping Plant No. 1, except at the staging area as noted specifically below.

Staging Area

A staging area, totaling 0.50 acre, would be established in an existing disturbed area along the landside of the East Levee of the Sutter Bypass at Pumping Plant No. 2 (Figure 2-3). Similar to Pumping Plant No. 1 as described above, the staging area would be multifunctional to accommodate and support construction activities, providing access, parking, equipment and materials storage, and a construction oversight area. No grading or other ground disturbance would be required to establish the staging areas. Upon completion of construction, leftover construction materials would be removed and the staging area would be restored to pre-project conditions.

Phase II (Construction Season II): Pumping Plant Work

The pumping plant work performed at Pumping Plant No. 2 would be identical to that described above for Pumping Plant No. 1, except for excavation and filling as noted specifically below.

Excavation and Filling

The proposed project would require the import of material for demolition backfilling and construction of access ramps, staging areas, and weir/stop log structures. Excavation would occur for geotechnical studies, construction of the weir/stop log structures, and conduit installation. However, at Pumping Plant No. 2, some excavation may not be required if the concrete apron at the inlet basin is structurally solid. All fill material would be obtained from a commercial source located within 50 miles of the project area, and all excavated material would be hauled away to an approved commercial disposal site within 50 miles of the project area. **Table 2-3** outlines the total soil disturbance and amount of fill proposed for Pumping Plant No. 2.

TABLE 2-3
SOIL DISTURBANCE AND FILL—PUMPING PLANT NO. 2

Project Element	Area Disturbed (acres)	Excavation and Demo (cubic yards)	Concrete, Slurry, and/or Aggregate Fill (cubic yards)	Backfill (cubic yards)
Old Pumping Plant Demolition and Backfill and New Headwall	0.13	452	520	784
Access Ramp	0.20	0	121	0
Construction of Weir/Stop Log Structures	0.01	730	194	636
Electrical Conduit Trench	0.07	79	39	40
Riprap Area	0.02	—	—	—
Total	0.43	1,261	874	1,460

SOURCE: Data compiled by DWR in 2019

Pumping Plant No. 3

Phase I (Construction Season I): Gravity Drain Work

Staging Area

Two staging areas, totaling 0.15 acre, would be established in an existing disturbed area along the landside of the East Levee of the Sutter Bypass at Pumping Plant No. 3 (Figure 2-4). Similar to Pumping Plant No. 1, the staging areas would be multifunctional to accommodate and support construction activities, providing access, parking, equipment and materials storage, and a construction oversight area. No grading or other ground disturbance would be required to establish the staging areas. Upon completion of construction, leftover construction materials would be removed and the staging areas would be restored to pre-project conditions.

Site Preparation

Before project construction, the inlet basin that supplies the gravity drains would need to be dewatered. The inlet basin currently forms a large sump (see Figure 2-4) that contains the foundation of the old control building that was previously demolished. To dewater the inlet basin, temporary sheet piles would be installed across the mouth of the inlet where it connects to the collecting canal to isolate the water in the sump. Then, as much as possible, gravity drains would transfer most of the basin water into the bypass. Small “trash” pumps would pump any remaining

water into the adjacent collecting canal to create a dry working area for the pipe extensions and headwall construction. In addition, one 30-foot California black walnut (*Juglans hindsii*) tree, located along the northwest side of the sump, would be removed using a backhoe or excavator.

Extension of Gravity Drains and Trash Racks

Once the area is dry, the existing trash racks and their concrete supporting structure would be removed. The contractor would extend the two existing gravity drain pipes approximately 30 feet to a headwall structure, trash racks, and weir/stop log structures upstream of the trash racks. Permanent sheet piles would be set and the remaining sump would be backfilled with approximately 1,680 cubic yards of soil to grade, creating a maintenance access pad. Similar to work at the other pumping plants, the area provided by the drain extension would also be backfilled to create an all-weather gravel access pad.

Riprap Armoring

To protect the new structures and the remaining sump, approximately 30 cubic yards of new riprap armoring would be placed along the banks of the inlet. The material would be placed while the sump was dewatered.

Recontouring of the Levee Prism

The large sump basin is a remnant from the removal of the abandoned control building. The sump currently protrudes into the levee prism and creates a deformation in the levee structure. After extension of the gravity drains and backfilling of the basin to allow for the maintenance access pad, the deformation would be recontoured with soil to reconstruct the levee prism geometry (see Figure 2-4).

Conduit Installation (Automation of Gravity Drain Gates)

The project would add automation to the refurbished gravity drain system by installing new mechanical gates and running power and communication from the pumping plant to the upgraded valve box. The existing gates would be replaced without the need to rebuild the box structure. The new gates would be automated to raise and lower electronically, depending on water elevations. The only new disturbance would be to trench in the electrical conduit running from the pumping plant's power interface up to the levee crown, and then along the levee crown road to the existing valve box.

Phase II (Construction Season II): Pumping Plant Work

Site Preparation

Identical to the second phase of work at the other pumping plants, sheet piles would be installed near the mouth of the intake basin and small "trash" pumps would pump the water in the basin out to the collecting canals to dewater the area between the pump intakes and the sheet piles. The basin would be allowed to dry before the start of work on the new weir/stop log structures.

Installation of Weir/Stop Log Structures

New weir/stop log structures would be installed across the intake sides of the pumping plant. These structures would enable DWR's Sutter Maintenance Yard staff to temporarily block the

water flow and isolate the area around the trash racks, effectively dewatering them, to allow visual inspections of the trash racks and support structures.

Installation of the weir/stop log structures would require excavating approximately 398 cubic yards of soil and removing the existing concrete footing and apron. New concrete footings and aprons would be installed and the channel adjacent to the pump structure would be narrowed. The concrete weir/stop log structures would be poured in place with rebar, which would connect the new structures to the new concrete aprons.

Excavation and Filling

The proposed project would require the import and export of material for demolition backfilling and construction of the access ramps, staging areas, and weir/stop log structures. All fill material would be obtained from a commercial source located within 50 miles of the project area, and all excavated material would be hauled away to an approved commercial disposal site within 50 miles of the project area. **Table 2-4** outlines the total soil disturbance and amount of fill proposed for Pumping Plant No. 3.

Riprap Rehabilitation

To construct the new concrete apron at the intake, the existing riprap armoring would need to be removed. Once the new structures were in place and cured, the riprap would be replaced to protect the new structures. The material used for riprap would be reused to the extent possible, but would likely be augmented with new material to create an appropriate level of armoring.

TABLE 2-4
SOIL DISTURBANCE AND FILL—PUMPING PLANT NO. 3

Project Element	Area Disturbed (acres)	Excavation and Demo (cubic yards)	Concrete, Slurry, and/or Aggregate Fill (cubic yards)	Backfill (cubic yards)
Old Pumping Plant Demolition and Backfill and New Headwall	0.02	334	180	253
Construction of Weir/Stop Log Structures	0.01, 0.01	398	100	396
Electrical Conduit Trench	0.05	54	26	26
Riprap Area(s)	0.01, 0.04	—	—	—
Sump Backfill	0.09	—	—	1,680
Recontouring of Levee Prism	0.28	90	65	2,212
Total	0.14	876	370	4,567

SOURCE: Data compiled by DWR in 2019

Construction Schedule

As discussed previously, construction at each pumping plant would occur in two phases, each completed in a single construction season. The first phase would include work to improve the gravity drains, including building demolition at Pumping Plant Nos. 1 and 2; the second phase

would involve constructing the weir/stop log structures for each pumping plant's intake basin. Generally, construction for each phase at each pumping plant is anticipated to occur over a 1-month construction period, totaling 3 months of construction for each phase. Phase I work is anticipated to begin in May 2021 and be completed by October 2021. Phase II work is expected to occur between May 2022 and October 2022. Sheet pile driving would occur for approximately 5 days at each pumping plant.

Construction work would take place during Sutter County's allowed construction hours, typically Monday through Friday, 8 hours per day.

Workforce and Equipment

The proposed project would employ approximately 5 workers over the duration of the three 1-month construction periods at each pumping plant. Construction at each pumping plant would be sequential, with the crew finishing work at one location before moving on to the next.

Table 2-5 and **Table 2-6** present the construction equipment that would likely be required at various times during Phases I and II.

TABLE 2-5
PHASE I CONSTRUCTION EQUIPMENT

Type of Equipment	Number of Equipment	Average Use (hours per day/duration)
Pickups	2	6 hours/3 months
Dump truck	2	6 hours/3 months
Excavator	2	6 hours/3 months
Trash pump	2	6 hours/3 months
Crane with pile driver attachment	1	6 hours/3 months
Front-end loader	1	6 hours/3 months

SOURCE: Data compiled by DWR in 2019

TABLE 2-6
PHASE II CONSTRUCTION EQUIPMENT

Type of Equipment	Number of Equipment	Average Use (hours per day/duration)
Pickups	2	6 hours/3 months
Concrete truck delivery	1	6 hours/3 months
Excavator	1	6 hours/3 months
Trash pump	2	6 hours/3 months
Crane with pile driver attachment	1	6 hours/3 months

SOURCE: Data compiled by DWR in 2019

Best Management Practices

The following BMPs would be implemented to protect water quality:

- All fueling and maintenance of vehicles and other equipment and staging areas shall occur in designated areas away from any water body.
- Diesel fuel and oil shall be used, stored, and disposed of in accordance with standard protocols for handling of hazardous materials.
- All personnel involved in the use of hazardous materials shall be trained in emergency response and spill control.
- All concrete washing and spoils dumping shall occur in a designated location.
- Construction stockpiles shall be covered within 24 hours of a weather event to prevent blow-off or runoff during weather events.
- Temporarily disturbed areas shall be reseeded with an appropriate seed mix or otherwise treated to reduce erosion and/or siltation.
- Erosion control measures shall be placed in areas that are upslope of aquatic habitat, to prevent any soil or other materials from entering aquatic habitat. Silt fencing and natural/biodegradable erosion control measures (i.e., straw wattles and hay bales) shall be used.
- Turbidity curtains, temporary barriers, or similar methods shall be used during in-channel work to control silts and sediments.

Operation and Maintenance Activities

DWR would be responsible for the operation and maintenance of the proposed project facilities as described below. The following activities are covered in the 2018 *Environmental Permitting for Operations and Maintenance Environmental Impact Report* (DWR, 2018).

The stop logs installed at the pumping plants would be placed as needed for maintenance, approximately every 3–5 years. Stop logs would normally be removed from the structure to allow water to flow to the pumping plants. The proposed gravity drains would be operated almost continuously, except in the winter months when the Sutter Bypass is too high and the pumps must be used. This is how they are used currently; however, the automated system may operate using smaller, more frequent changes compared to manual adjustments.

The newly installed trash racks would prevent a large amount of vegetation, primarily water primrose (*Ludwigia* sp.), from entering the pumping plants. The trash racks would be inspected and cleared weekly, or as needed during heavy-growth periods, using a boom truck and excavator.

Anticipated Regulatory Permits and Approvals

Table 2-7 lists the permits and approvals that may be required for the proposed project, and the regulatory agencies that may rely on this document and the permits and/or approvals for consideration.

TABLE 2-7
ANTICIPATED REGULATORY REQUIREMENTS AND PERMITS FOR PROJECT IMPLEMENTATION

Agency	Type of Approval
Federal Agencies	
U.S. Army Corps of Engineers	Clean Water Act Section 404 permit
	Clean Water Act Section 408 authorization
U.S. Fish and Wildlife Service	Federal Endangered Species Act Section 7 biological opinion
State Agencies	
California Department of Water Resources	CEQA lead agency; project approval Assembly Bill 52 compliance
California Department of Fish and Wildlife	Section 1602 lake and streambed alteration agreement California Endangered Species Act Section 2081; incidental take permit or consistency determination
Central Valley Regional Water Quality Control Board	Clean Water Act Section 401 water quality certification
State Historic Preservation Office	National Historic Preservation Act Section 106 compliance
Central Valley Flood Protection Board	Encroachment permit
Local/Other Agencies	
Feather River Air Quality Management District	Compliance with local air quality regulations

NOTE:

CEQA = California Environmental Quality Act

SOURCE: Data compiled by DWR in 2019

2.4 References

DWR (California Department of Water Resources). 2018. Environmental Permitting for Operations and Maintenance Final Environmental Impact Report. Division of Flood Management, Flood Maintenance Office. January 2018.

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CHAPTER 3

Initial Study and Environmental Checklist

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.

- | | | |
|--|---|--|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources | <input checked="" type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input checked="" type="checkbox"/> Geology/Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards & Hazardous Materials |
| <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation | <input checked="" type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Wildfire | <input checked="" type="checkbox"/> 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

Mitra Emami

Printed Name

California Department of Water Resources

Agency

Date

Chief of Flood Maintenance Office

Title

3.2 Environmental Checklist

Aesthetics

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
AESTHETICS — Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

The project area is characterized by the Sutter Bypass to the west, riparian vegetation along the levees, and surrounding rice fields. Adjacent land uses include agricultural uses, associated support infrastructure, and open space. The topography of the project area and vicinity is relatively flat, and in most years, lands near the project area are flooded by flows diverted from the Sacramento River into designated overflow areas. Policy ER 7.1 of the *Sutter County 2030 General Plan* identifies the Sutter Buttes and the Sacramento, Feather, and Bear Rivers as scenic resources (Sutter County, 2011). The Sutter Buttes are approximately 5 miles north and the Sacramento River is approximately 5 miles west of Pumping Plant No. 3, the northernmost and westernmost pumping plant in the project area; and the Feather and Bear Rivers are approximately 2.5 miles east of Pumping Plant No. 1, the southernmost pumping plant.

Potential viewer groups include occupants of vehicles traveling along Franklin, Obanion, and Boulton Roads and Sawtelle, Laurel, and Oak Avenues. However, the project area is partially obscured by trees and visibility is limited in some locations. The general public navigating the Sutter Bypass by boat would not see the pumping plant sites because they lie east of the East Levee of the Sutter Bypass.

A review of the current California Department of Transportation Map of Designated Scenic Routes indicates that there are no officially designated State scenic highways in Sutter County (Caltrans, 2011).

Discussion

- a, b) The *Sutter County 2030 General Plan* (Policy ER 7.1) identifies the Sutter Buttes and the Sacramento, Feather, and Bear Rivers as scenic resources (Sutter County, 2011).

However, the proposed project would not substantially change the character of the project vicinity because it proposes only to demolish the existing control buildings and rehabilitate the gravity drain system. Given the nature of proposed project activities and the distance of the project area from scenic resources, the proposed project has no potential to obstruct or affect public views of designated scenic resources. In addition, there are no officially designated State scenic highways in Sutter County. Because the proposed project would not obstruct the view of a scenic vista, affect designated scenic resources, or State scenic highways, **no impact** would occur.

- c) The project area's visual character is defined mostly by the Sutter Bypass and the riparian vegetation along the levees. During construction of the proposed project, the temporary presence of equipment, vehicles, and construction crews in the project area would result in changes to local visual character. However, these effects would be relatively short term, not extending longer than two construction seasons between May 1 and October 30. During the course of these two construction seasons, construction is anticipated to last a total of 6 months (1 month at each of the three pumping plant sites during each of the two project phases).

Operation of the project would leave the trees and other vegetation along the bypass intact, with the exception of one Northern California black walnut tree, discussed in *Biological Resources* below while demolishing the existing control buildings and rehabilitating the gravity drain system. Accordingly, the proposed project would not substantially degrade the existing visual character of the site and its surroundings. Therefore, impacts of the proposed project on the visual character of the project area would be **less than significant**.

- d) The project area is in a rural setting where primary sources of nighttime light and daytime glare are limited to rural residences, some nighttime agricultural activities, and passing vehicles. The proposed project would not install or add substantial new sources of light or glare to the project vicinity. Furthermore, construction would typically occur during 8-hour daytime shifts and is not anticipated to extend into the nighttime. Operation of the project would not require additional nighttime light compared to current conditions. Given the relatively short-term nature of project construction activities and the nonurbanized location of the project area, project-related lighting impacts would be **less than significant**.

References

- Caltrans (California Department of Transportation). 2011. California Scenic Highway Mapping System: Sutter County.
- Sutter County. 2011. Sutter County 2030 General Plan. Adopted by Sutter County Board of Supervisors on March 29, 2011, Resolution No. 11-029. Prepared in consultation with Atkins (formerly PBS&J), DKS Associates, West Yost Associates, and Willdan Financial Services. Yuba City, California.

Agriculture and Forestry Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
AGRICULTURE AND FORESTRY RESOURCES —				
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

Proposed project activities would occur on the landside of the East Levee of the Sutter Bypass, the access roads on the levee, and the staging areas on the levee toe. Canals that collect irrigation water lie east of the pumping plants, and agricultural lands occur within the Sutter Bypass and east of the project area.

Sutter County is located in the northern portion of California's Central Valley, in the area known as the Sacramento Valley. It contains some of the richest soils in the state. These soils, combined with abundant surface and subsurface water supplies and a long, warm growing season, make the county's agricultural resources very productive.

The Sutter Bypass is designated as Open Space in the *Sutter County 2030 General Plan* (Sutter County, 2014) and is used for growing rice and other crops. Most of the land surrounding the bypass also is farmland used for row crops or rice. Sutter County (County) has designated nearly all of the agricultural lands both west and east of the Sutter Bypass as an agricultural preserve. Some of the parcels near the project area, primarily west of the Sutter Bypass, are under Williamson Act contract (DOC, 2015). According to the Farmland Mapping and Monitoring Program of the California Department of Conservation, Division of Land Resource Protection,

most of the land on either side of the Sutter Bypass near the pumping plants is either Prime Farmland or Farmland of Statewide Importance (DOC, 2017). The County has planned and zoned these lands for exclusive agriculture. No lands in Sutter County are designated by the *Sutter County 2030 General Plan* as forest land or timberland.

Discussion

- a) The lands within and on either side of the Sutter Bypass near the pumping plants are in agricultural use. Most of these agricultural lands outside of the Sutter Bypass are either Prime Farmland or Farmland of Statewide Importance (DOC, 2017). However, proposed project activities would be limited to the footprints of the respective pumping plants, and previously disturbed, non-Prime Farmland areas along the landside of the East Levee of the Sutter Bypass would be used for the materials staging areas. Additionally, upon completion of construction, leftover construction materials would be removed and the staging areas would be restored to pre-project conditions. Therefore, the proposed project would not convert any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance in the area to nonagricultural use. This impact would be **less than significant**.
- b) Some of the agricultural parcels near the project area are under Williamson Act contract (DOC, 2015). The majority of the Williamson Act parcels in the project vicinity lie across the Sutter Bypass from the pumping plants. As described above in response to checklist question a), proposed project activities would be limited to the footprints of the pumping plants and previously disturbed areas, which are not enrolled in a Williamson Act contract, would be used for materials staging areas. Therefore, the proposed project would not conflict with existing agricultural zoning or any Williamson Act contract. This impact would be **less than significant**.
- c, d) No lands in Sutter County are designated by the *Sutter County 2030 General Plan* as forest land or timberland. Therefore, the proposed project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production, nor would the project result in the loss of forest land or conversion of forest land to nonforest use. **No impact** would occur.
- e) As described above, the lands within and on either side of the Sutter Bypass near the pumping plants are in agricultural use; however, proposed project activities would be limited to the footprints of the pumping plants and previously disturbed areas would be used for materials staging areas. Further, no lands in Sutter County are designated as forest land. The proposed project would not involve any changes in the existing environment that could result in conversion of Farmland to nonagricultural use or conversion of forest land to nonforest use. This impact would be **less than significant**.

References

DOC (California Department of Conservation). 2015. Sutter County Williamson Act FY 2014/2015 map. Scale 1:100,000. Division of Land Use Protection, Farmland Mapping and Monitoring Program, Sacramento, California.

———. 2017. Sutter County Important Farmland 2016 map. Scale 1:100,000. Division of Land Use Protection, Farmland Mapping and Monitoring Program, Sacramento, California. June 2017.

Sutter County. 2014. Sutter County General Plan, Countywide Land Use Diagram. Revised August 7, 2014.

Air Quality

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
AIR QUALITY —				
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project area is in Sutter County, which is part of the Sacramento Valley Air Basin (SVAB). The SVAB includes all of Sacramento, Yolo, Yuba, Sutter, Colusa, Glenn, Butte, Tehama, and Shasta Counties and parts of Solano and Placer Counties. The Feather River Air Quality Management District (FRAQMD) is the regional agency that regulates air quality in the project area.

The SVAB, including Sutter County, is characterized by a Mediterranean climate that includes mild, rainy winter weather from November through March and warm to hot, dry weather from May through September. During the summer, the Sacramento Valley has an average high temperature of 92 degrees Fahrenheit (°F) and an average low temperature of 58°F. In the winter, the average high temperature is 58°F and the average low is 40°F. Average annual rainfall is approximately 20 inches.

The SVAB is bounded on the west and north by the Coast Ranges and on the east by the southern portion of the Cascade Range and the northern Sierra Nevada. Prevailing winds are moderate and vary from dry land flows from the north to moist ocean breezes from the south. The mountains surrounding the SVAB create a barrier to airflow that, under certain meteorological conditions, traps both pollution generated locally in the valley and pollution transported northward from the Sacramento metropolitan area by prevailing winds (FRAQMD, 2010).

Criteria air pollutants are a group of six common air pollutants for which the U.S. Environmental Protection Agency (EPA) has set national ambient air quality standards. These pollutants include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter in size fractions of 10 microns or less in diameter (PM₁₀) and 2.5 microns or less in diameter (PM_{2.5}), and lead. Most of the criteria pollutants are emitted as primary pollutants. Ozone, however, is a secondary pollutant that is formed in the atmosphere by chemical reactions between oxides of nitrogen (NO_x) and reactive organic gases (ROG) in sunlight. In addition to the criteria air pollutants

identified by EPA, California adds four State criteria air pollutants: visibility-reducing particulates, sulfates, hydrogen sulfide, and vinyl chloride. Sutter County is designated as a nonattainment area with respect to the State PM₁₀ standard and the State and national ozone standards. The area is designated as unclassified or an attainment area for all other State and federal standards (FRAQMD, 2019).

Some receptors are considered more sensitive than others to air pollutants. Reasons for 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 project area is surrounded by agricultural and open space uses. There are no residences or other sensitive receptors in the vicinity. The nearest residential communities in Yuba City and Marysville are located approximately 7–10 miles northeast of the northernmost pumping plant (Pumping Plant No. 3).

Discussion

- a) The federal and California Clean Air Acts require any air district that has been designated as a nonattainment area relative to the federal and State ambient air quality standards for ozone, carbon monoxide, sulfur dioxide, or nitrogen dioxide to prepare and submit a plan for attaining and maintaining the standards. The district also must review its progress made toward attaining the standards and update the plan regularly. Together, the air pollution control districts and air quality management districts for the counties in the northern Sacramento Valley form the Northern Sacramento Valley Planning Area (NSVPA). The NSVPA districts are designated as nonattainment for the State ozone standard and have jointly prepared an air quality attainment plan. The 2018 triennial update of the NSVPA Air Quality Attainment Plan (2018 Plan) assesses the progress made in implementing the previous triennial update and proposes modifications to the strategies necessary to attain the State ambient air quality standards by the earliest practicable date (SVAQEEP, 2018).

FRAQMD has not published guidance for assessing a project or plan relative to the applicable clean air plan, which currently is the 2018 Plan. The proposed project would demolish the existing control buildings and rehabilitate the gravity drain system. It would not induce or increase the potential for growth in the project area. Construction and operation of the proposed project would result in a minimal increase in traffic levels along local roadways compared to existing conditions (discussed further in the *Transportation* section of this IS/MND). Because the proposed project would not result in growth-inducing effects or in long-term increases in population or vehicle miles traveled, the project would not conflict with or obstruct implementation of the 2018 Plan. Therefore, this impact would be **less than significant**.

The proposed project would result in construction-related emissions from the operation of equipment. No single project will, by itself, result in nonattainment of ambient air quality

standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. Air districts use significance thresholds for daily emissions as a guide to identify the level of significance of a project's potential impact on the formation of ozone and a project's contribution to the district's overall PM₁₀ load. Therefore, the significance thresholds represent levels below which the project's contribution to the cumulative air quality impact can be considered less than significant. The FRAQMD *Indirect Source Review Guidelines* (FRAQMD, 2010) provide recommended thresholds of significance for project-generated emissions of ozone precursors and PM₁₀.

Construction activities for the proposed project would involve using equipment that would emit exhaust containing ozone precursors (ROG and NO_x) and particulate matter (PM₁₀ and PM_{2.5}). Vehicles used on-site and off-site for transport of materials and construction worker commutes would also generate pollutant emissions. Emissions levels for these activities would vary depending on the number and types of equipment used, the duration of use, operational schedules, and the number of construction workers. Criteria pollutant emissions of ROG and NO_x from these emissions sources would add incrementally to the regional atmospheric loading of ozone precursors during project construction. During project operation, occasional maintenance and operational trips to the pumping plant sites would occur. These trips would be similar to existing conditions without the project, and therefore, would not be anticipated to result in an increase in emissions.

The California Emissions Estimator Model (CalEEMod) 2016, Version 3.2, was used to estimate emissions of ROG, NO_x, PM₁₀, and PM_{2.5} that would be generated by off-road construction equipment (e.g., excavators, graders, loaders), considering the project-specific construction schedule and equipment requirements for project construction. Emissions were also estimated for vehicle trips associated with construction such as worker commutes, material delivery, and haul truck trips. For the assumptions and calculations used to estimate project-related construction emissions, see **Appendix A**.

Project construction would take place in two phases. Phase I work is anticipated to begin in June 2021, with construction lasting 1 month at each pumping plant. Construction at all three pumping plants under Phase I is anticipated to be complete by October 2021. Phase II work is expected to occur between June 2022 and October 2022. Project construction activities at the three sites would take place sequentially, with no activities overlapping, and would take approximately 132 workdays to complete over a total period of 6 months in 2021 and 2022. Average daily construction emissions were estimated by dividing total estimated construction emissions by the number of workdays. **Table 3-1** shows estimated average daily emissions and compares those emissions to the FRAQMD thresholds.

**TABLE 3-1
AVERAGE DAILY CONSTRUCTION-RELATED POLLUTANT EMISSIONS**

Project Scenario	Construction Emissions (pounds per day)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Unmitigated Scenario				
Project Average	2.4	23.3	1.1	0.9
FRAQMD Threshold	25	25	80	–
Exceed Threshold?	No	No	No	–

NOTES:

FRAQMD = Feather River Air Quality Management District; NO_x = oxides of nitrogen; PM_{2.5} = particulate matter that is 2.5 microns or less in diameter; PM₁₀ = particulate matter that is 10 microns or less in diameter; ROG = reactive organic gases

SOURCE: Data compiled by Environmental Science Associates in 2019 (see Appendix A)

FRAQMD classifies the proposed project as a Type 2 project, as it would not generate emissions during the operational phase. FRAQMD guidance states that if a Type 2 project exceeds “the thresholds of 25 lbs/day [pounds per day] of NO_x or ROG, or daily emissions of 80 lbs/day of PM₁₀, the project must apply Best Available Mitigation Measures for Construction Phase...and include other mitigation to reduce the impact to below the significant thresholds” (FRAQMD, 2010).

As indicated in Table 3-1, the proposed project’s average daily construction NO_x emissions would not exceed any of FRAQMD’s significance thresholds. FRAQMD considers projects that do not exceed significance thresholds to have a less-than-significant impact as long as they implement the recommended Standard Mitigation Measures. These measures are listed as Mitigation Measure AQ-1 below.

Further, as shown in the project’s consistency determination with DWR’s Greenhouse Gas Emissions Reduction Plan, discussed in detail in the *Greenhouse Gases* section of this IS/MND and included as **Appendix B**, the project would incorporate into its design DWR’s project-level GHG emissions reduction strategies. The project-level emissions reduction measures include (1) implementation of DWR’s Construction Best Management Practices and (2) implementation of Statewide Equipment and Fuel Regulations. Many of these measures would also serve to reduce air pollutant emissions by minimizing fuel usage by construction equipment and for transportation of construction materials.

With implementation of Mitigation Measure AQ-1, the impact of the proposed project related to the potential for construction-related exhaust emissions to result in or contribute to a violation of an air quality standard, and hence to contribute to the cumulative air quality impact, would be **less than significant with mitigation incorporated**.

Mitigation Measure AQ-1: Implement FRAQMD Standard Mitigation Measures for the Construction Phase.

DWR and its construction contractor shall implement the following FRAQMD Standard Mitigation Measures during project construction:

SMM 1: Implement a Fugitive Dust Control Plan.

SMM 2: Construction equipment exhaust emissions shall not exceed FRAQMD Regulation III, Rule 3.0, Visible Emissions limitations (40 percent opacity of Ringelmann 2.0).

SMM 3: 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.

SMM 4: Limit idling time to 5 minutes to save fuel and reduce emissions in accordance with State Idling Rule.

SMM 5: Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.

SMM 7: 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 CARB and the FRAQMD to determine registration and permitting requirements prior to equipment operation at the site.

With implementation of Mitigation Measure AQ-1, DWR and its construction contractor would comply with FRAQMD CEQA guidance for any project that does not exceed any of FRAQMD's thresholds. As a result, the proposed project would not result in a cumulatively considerable increase in emissions of a criteria pollutant or contribute to a violation of an air quality standard. Therefore, this impact would be **less than significant with mitigation incorporated**.

- c) On-site heavy-duty equipment used during project construction would generate short-term emissions of diesel exhaust. CARB identified diesel particulate matter from diesel-fueled engines as a toxic air contaminant in 1998. Project construction activities would generate emissions of diesel particulate matter from the use of off-road diesel equipment for site grading, excavation, and other construction activities, and from truck trips to haul materials to and from the construction sites. The dose to which receptors are exposed (a function of the concentration and duration of exposure) is the primary factor used to determine the health risk (i.e., potential exposure to toxic air contaminant emissions at levels that exceed applicable standards). Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the maximally exposed individual. Thus, the risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the

California Environmental Protection Agency's Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to emissions of toxic air contaminants, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project (OEHHA, 2015).

The project's short-term construction activities would not expose sensitive receptors to substantial pollutant concentrations for the following reasons:

- The generation of diesel particulate matter emissions by project construction would be temporary. The duration of construction at each pumping plant site would be a maximum of 1 month per year for 2 years, for a total exposure of 3 months (less than 0.25 percent of the 70-year exposure period).
- No sensitive receptors are located in the immediate vicinity of the three pumping plant sites. The Office of Environmental Health Hazard Assessment requires that health risk impacts be considered if construction activities would take place within 1,000 feet of sensitive receptors. There are no sensitive receptors within 1,000 feet of any of the three construction locations.

As a result, the impact of the proposed project related to exposure of sensitive receptors to substantial pollutant concentrations would be **less than significant**.

- d) Combustion exhaust from the use of diesel fuel in construction and operation equipment could generate localized objectionable odors near the project area. These odors would be short-term and not perceptible beyond the project footprint. Further, because of the absence of sensitive receptors in the vicinity, no exposure would occur. Given the temporary nature of construction and maintenance activities at the pumping plant sites and the distances from sensitive receptors, the proposed project would have **no impact** with respect to creation of odors affecting a substantial number of people.

References

- FRAQMD (Feather River Air Quality Management District). 2010. Indirect Source Review Guidelines. June 7, 2010.
- . 2019. Area Designations. Updated March 26, 2019.
- OEHHA (Office of Environmental Health Hazard Assessment). 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines—Guidance Manual for Preparation of Health Risk Assessments. February 2015.
- SVAQEEP (Sacramento Valley Air Quality Engineering and Enforcement Professionals). 2018. North Sacramento Valley Planning Area 2018 Triennial Air Quality Attainment Plan. July 6, 2018.

Biological Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
BIOLOGICAL RESOURCES — Would the project:				
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 Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Data Sources/Methodology

The discussion and analysis in this section are based on the Biological Survey Report (**Appendix C**) and Aquatic Resources Delineation prepared for the proposed project (ESA, 2019a, 2019b), as well as aerial interpretations in revised project boundaries. Biological resources in the project area were identified by Environmental Science Associates biologists through a field review conducted on October 18, 2018, and a biological resources survey and aquatic resources delineation conducted on March 14, 2019. Before the survey, a review of pertinent literature and database queries was conducted for the pumping plant sites and surrounding area. The survey was conducted on foot and existing habitat types, plants, and wildlife species in and adjacent to the project area were recorded. The biological resources survey focused on identifying and delineating habitat for special-status plant and wildlife species, and on recording general habitat conditions and incidental species observed.

Habitats present in the project area were compared to the habitat requirements of the regionally occurring special-status species and used to determine which of these species had the potential to occur within or adjacent to the project footprint. Potentially jurisdictional wetlands and other waters of the U.S. were delineated according to methods outlined in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to*

the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE, 2008). Plant nomenclature follows *The Jepson Manual: Vascular Plants of California (Second Edition)* (Baldwin et al., 2012).

The primary sources of data referenced for this section include the following:

- The U.S. Fish and Wildlife Service (USFWS) List of Threatened and Endangered Species that May Occur in your Proposed Project Location, and/or May Be Affected by Your Proposed Project (USFWS, 2019a, 2019b, 2019c)
- The California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB) list of plant and wildlife species documented on the project quads and eight surrounding quads (CDFW, 2019a, 2019b, 2019c)
- The California Native Plant Society (CNPS) online database of plant species documented on the project quads and eight surrounding quads (CNPS, 2019)
- Online soil maps from the U.S. Department of Agriculture's National Resources Conservation Service (NRCS, 2019a)
- The CDFW CNDDDB datasets available in the Biogeographic Information and Observation System 5 Data Viewer (CDFW, 2019d)
- *Sutter Bypass Pumping Plant Rehabilitation Project Aquatic Resources Delineation* (ESA, 2019a)
- *Sutter Bypass Pumping Plant Rehabilitation Project Biological Resources Survey Report* (ESA, 2019b) (Appendix C)

Regional Setting

The project area is in an agricultural area of the Central Valley west and southwest of Yuba City, California, in unincorporated Sutter County. The work area for each pumping plant site is bounded by the Sutter Bypass to the west, levee to the north and south, and collecting canals followed by rice fields to the east.

Environmental Setting

The three pumping plants are located along the east (land) side of the East Levee of the Sutter Bypass in unincorporated Sutter County. Pumping Plant Nos. 1, 2, and 3 are located approximately 9 miles west, 10 miles southwest, and 14 miles south-southwest of Yuba City, respectively. The regional location of each pumping plant is depicted in Figure 1-1 of the Biological Resources Survey Report (Appendix C). The locations of the project's work areas are:

- *Pumping Plant No. 1:* Township 13 North, Range 3 East, Sections 33 and 34 of the Sutter Causeway U.S. Geological Survey 7.5-minute series quadrangle (quad)
- *Pumping Plant No. 2:* Township 14 North, Range 2 East, Section 26 of the Gilsizer Slough quad
- *Pumping Plant No. 3:* Township 15 North, Range 2 East, Section 29 of the Tisdale Weir quad

The pumping plants are situated at the base of the landward side of the levee. Topography at each pumping plant work area is generally flat, with access roads sloping down from the levee crown. Elevations range from 28 to 45 feet above mean sea level at Pumping Plant No. 1, 30 to 51 feet above mean sea level at Pumping Plant No. 2, and 37 to 57 feet above mean sea level at Pumping Plant No. 3.

The pumping plant sites include staging areas, gravel access roads, the abandoned control buildings at Pumping Plant Nos. 1 and 2, segments of the collecting canals, and the sump basin and adjacent levee prism at Pumping Plant No. 3. The study area at each pumping plant is depicted in Figures 1-2, 1-3, and 1-4 of the Biological Resources Survey Report (Appendix C).

Habitat Types

Descriptions of habitat types present in the project area are based on field observations and are included below. The following habitat types are present in the work areas at all three pumping plants: ruderal, annual grassland, developed, and perennial riverine. Additionally, Himalayan blackberry brambles occur at Pumping Plant No. 2 and an inlet basin occurs at Pumping Plant Nos. 1 and 2. **Table 3-2** summarizes the acreage of habitat types at the respective pumping plants. Habitat types in the project area are depicted in **Figures 3-1, 3-2, and 3-3**.

TABLE 3-2
ACREAGES OF HABITAT TYPES IN THE PROJECT AREA

Habitat Type	Pumping Plant No. 1 Acreage ¹	Pumping Plant No. 2 Acreage ¹	Pumping Plant No. 3 Acreage ¹
Annual grassland	0.15	0.23	0.16
Perennial riverine ²	0.10	0.31	0.30
Inlet basin ²	0.05	0.17	0.00
Ruderal	0.06	0.56	0.38
Developed	1.00	1.57	0.60
Himalayan blackberry brambles	0.00	0.01	0.00
Total	1.36	2.85	1.44

NOTES:

1 Geographic information system calculations may not reflect the exact acreage of the project area due to rounding.

2 Verified jurisdictional waters of the U.S.

SOURCE: Data compiled by Environmental Science Associates in 2019

Annual Grassland

Annual grassland occurs primarily on the levee slopes and in undeveloped areas around the pumping plants. The habitat is subject to regular maintenance and disturbance, including mowing and burning. During the 2018 site visit, this community had recently burned at Pumping Plant Nos. 1 and 2, and most of the vegetation was blackened. Vegetation had reestablished by the time of the March 2019 fieldwork. Dominant vegetation includes wild oats (*Avena* spp.), rye grass (*Festuca perennis*), prickly lettuce (*Lactuca serriola*), field mustard (*Brassica rapa*), and other ruderal species.

Ruderal

Ruderal vegetation is present in the work areas at all three pumping plants. This habitat occurs in areas of frequent disturbance and is subject to regular maintenance, including mowing and burning. During the 2018 site visit, this community had recently burned at Pumping Plant Nos. 1 and 2, and most of the vegetation was blackened. Vegetation had reestablished by the time of the 2019 fieldwork. Dominant vegetation includes cranesbill (*Geranium dissectum*), storksbill (*Erodium botrys*), yellow star-thistle (*Centaurea solstitialis*), field mustard (*Brassica rapa*), California burclover (*Medicago polymorpha*), and milk thistle (*Silybum marianum*). A single Northern California black walnut (*Juglans hindsii*) tree occurs in this community at Pumping Plant No. 3 on the north side of the sump basin. This is the only tree in the project area.

Developed

Developed habitat in the project area consists of the gravel access roads, toe roads, and parking areas around the pumping plants; the abandoned control buildings; and the gravel levee crown road. These areas are largely devoid of vegetation, but where present, vegetation consists of weedy, ruderal species.

Himalayan Blackberry Brambles

A small Himalayan blackberry bramble is present at the eastern edge of the proposed staging area at Pumping Plant No. 2. This habitat type is dominated by nonnative, invasive Himalayan blackberry (*Rubus armeniacus*) and occurs along the bank of the collecting canal.

Aquatic Resources

The federal government regulates waters of the U.S., including many wetlands, under the Clean Water Act (CWA). The federal government defines wetlands in Section 404 of the CWA as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 Code of Federal Regulations [CFR] 328.3[c] and 40 CFR 230.3). Under normal circumstances, the federal definition of wetlands requires the presence of three wetland identification parameters: wetland hydrology, hydric soils, and hydrophytic vegetation. Examples of wetlands include freshwater marsh, seasonal wetlands, and vernal pool complexes.

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. CDFW does not normally have direct jurisdiction over wetlands unless they are subject to regulation under streambed alteration agreements or they support State-listed species; however, CDFW has trust responsibility for wildlife and habitats pursuant to California law.

“Other waters of the U.S.” 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 and an ordinary high-water mark. Examples of other waters of the U.S. include rivers, creeks, intermittent and ephemeral channels, ponds, and lakes.

The aquatic resources delineation identified 0.72 acre of aquatic resources in the project area which were verified by USACE as subject to to regulation under Section 404 of the CWA on September 6, 2019 (SPK-2019-00576). An additional 0.21 acre of aquatic resources was subsequently identified after project boundary revisions. These aquatic resources have yet to be verified by USACE. Aquatic communities were classified using the *Classification of Wetlands and Deepwater Habitats of the U.S.* (Cowardin Classification) (FGDC, 2013) (**Table 3-3**). **Figures 3-1, 3-2, and 3-3** show the location and extent of the aquatic features.

TABLE 3-3
SUMMARY OF AQUATIC RESOURCES IN THE PROJECT AREA

Aquatic Feature	Cowardin Classification	Total Acres	Total Linear Feet
Other Waters			
Perennial Riverine 1	(R2UBHx) Riverine Lower Perennial Unconsolidated Bottom (Permanently Flooded) Excavated	0.10	63
Perennial Riverine 2	(R2UBHx) Riverine Lower Perennial Unconsolidated Bottom (Permanently Flooded) Excavated	0.31	207
Perennial Riverine 3	(R2UBHx) Riverine Lower Perennial Unconsolidated Bottom (Permanently Flooded) Excavated	0.30	375
Inlet Basin 1	(R2Hxr) Riverine Lower Perennial (Permanently Flooded) Excavated, Artificial	0.05	–
Inlet Basin 2	(R2Hxr) Riverine Lower Perennial (Permanently Flooded) Excavated, Artificial	0.17	–
Total Aquatic Resources		0.93	645

NOTE:

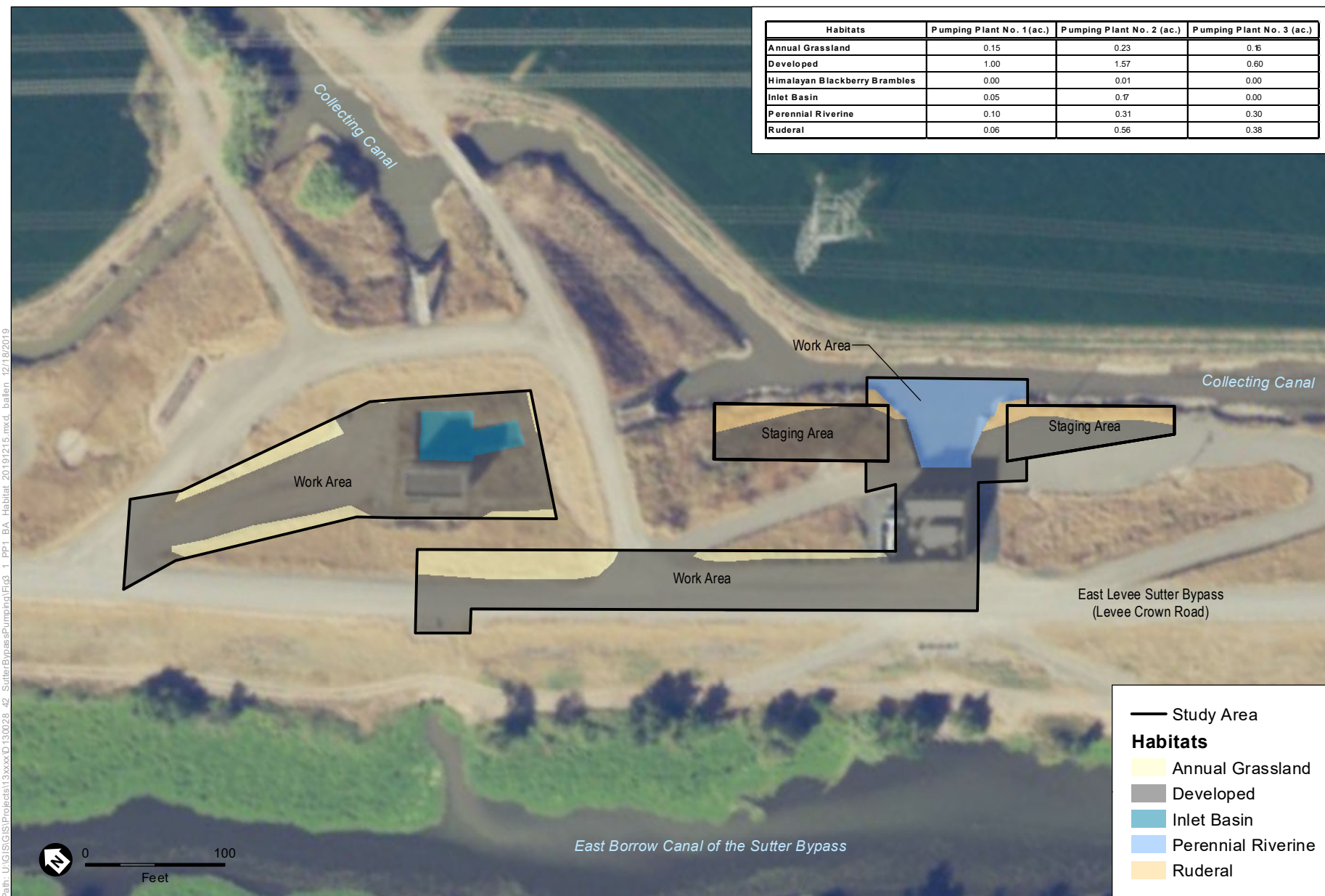
Cowardin Classification = *Classification of Wetlands and Deepwater Habitats of the U.S.*

SOURCE: Data compiled by Environmental Science Associates in 2019

Perennial Riverine

Perennial riverine habitat exists within the collecting canals on the east side of the pumping plants. This habitat type includes what was previously the inlet basin at Pumping Plant No. 3 where the control building was removed. After the control building was removed, the edges of the basin eroded, forming a sump that is directly connected to the adjacent collecting canal, effectively making it part of the collecting canal. The foundation of the old control building is still present within the sump.

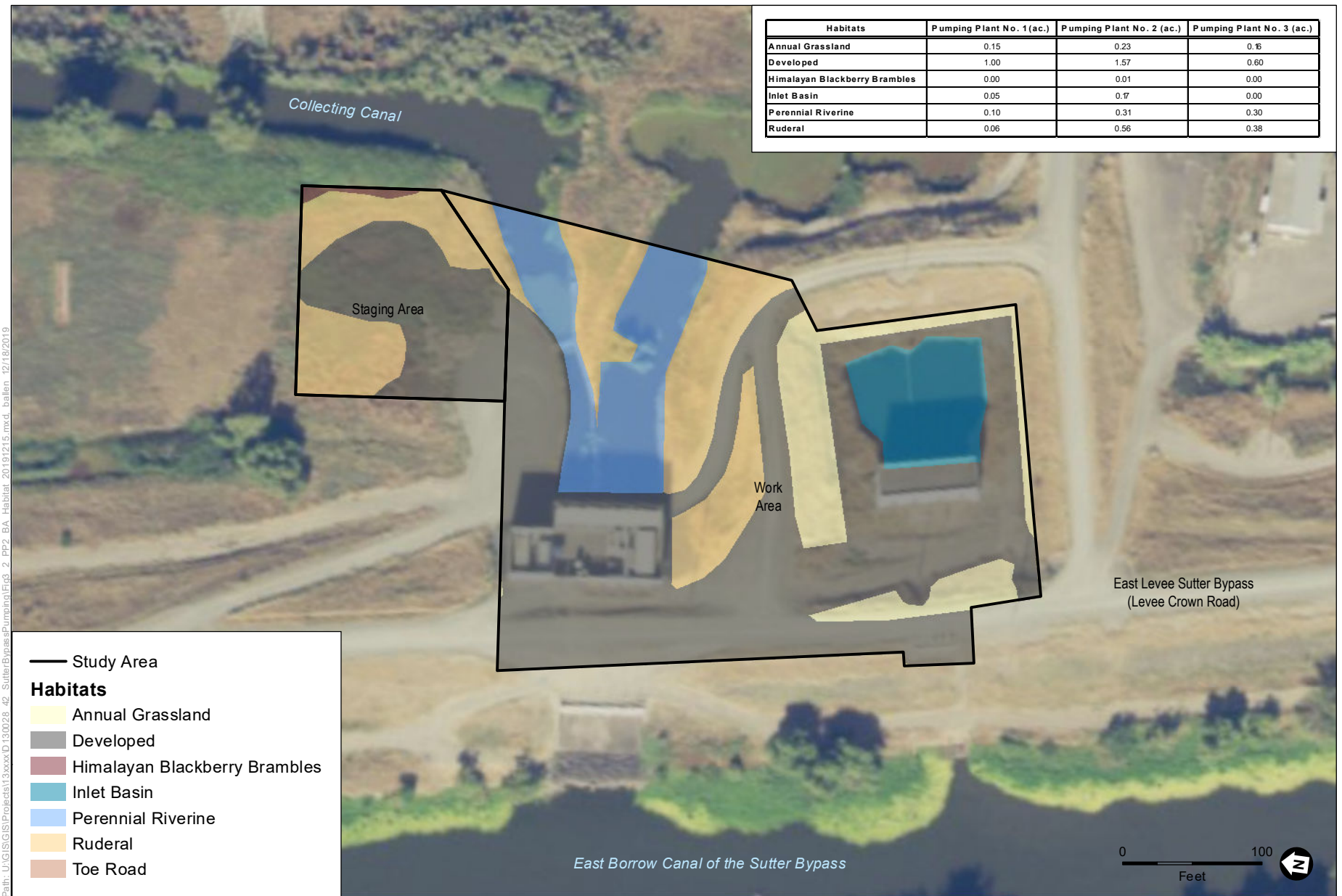
No riparian or emergent vegetation associated with the canals or sump is present in the project area. A single black walnut tree is located on the north side of the sump basin at Pumping Plant No. 3 and does not constitute a riparian community. Riparian communities are made up of a unique and diverse assemblage of plant species that are influenced by flooding and water flow. Riparian communities provide many functions and values, including wildlife movement corridors; food, cover, and water for a diversity of animals; stream shading; nutrient cycling; groundwater regeneration; bank stabilization; and reduction of downstream flooding. The single tree is not part of a larger riparian community and does not provide the functions and values of a riparian community (NRCS, 2019b). Depending on the time of year, floating aquatic vegetation



SOURCE: USDA, 2016; DWR, 2019; HT Harvey, 2015; ESA, 2019

Sutter Bypass Pumping Plant Rehabilitation Project

Figure 3-1
Habitat Types
Pumping Plant No.1



SOURCE: USDA, 2016; DWR, 2019; HT Harvey, 2015; ESA, 2019

Sutter Bypass Pumping Plant Rehabilitation Project

Figure 3-2
Habitat Types
Pumping Plant No.2



SOURCE: USDA, 2016; DWR, 2019; HT Harvey, 2015; ESA, 2019

Sutter Bypass Pumping Plant Rehabilitation Project

Figure 3-3
Habitat Types
Pumping Plant No.3

including mosquito fern (*Azolla filiculoides*) and water primrose (*Ludwigia* sp.) covers or partially covers the water surface. Water in the canals is managed for agricultural needs and is controlled through the use of pumps and gravity drains. Water is either pumped from or drained to the Sutter Bypass, depending on the needs of adjacent agricultural fields.

Inlet Basin

The project area has two inlet basins, one each at Pumping Plant Nos. 1 and 2. The inlet basins are concrete-lined features associated with the gravity drain system at the abandoned control buildings. The inlet basins are hydrologically connected to the collecting canals and Sutter Bypass through pipes under the levee and access roads. Water flows through pipes from the collecting canals to the inlet basins, and exits through gravity drains into the Sutter Bypass. Screw gates at the pipes that connect the basins to the collecting canals can be closed to cut off water flow. There is no riparian or emergent vegetation associated with the inlet basins.

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 natural 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) habitats and natural communities that are regulated by federal and State resource agencies, (b) natural communities ranked S1, S2, or S3 by CDFW (2018), and (c) areas protected by County ordinance. Sensitive natural communities in the project area are Perennial Riverine 1, Perennial Riverine 2, Perennial Riverine 3, Perennial Riverine 4 (collectively known as the “collecting canals”), Inlet Basin 1, and Inlet Basin 2 because they are subject to regulation by USACE under Section 404 of the CWA. No other sensitive natural communities occur in the project area.

Wildlife Movement Corridors

Movements of wildlife generally fall into three basic categories:

- Movements along corridors or habitat linkages associated with home range activities such as foraging, territory defense, and breeding.
- Dispersal movements—typically one-way movements (e.g., juvenile animals leaving their natal areas or individuals colonizing new areas).
- Temporal migration movements—essentially dispersal actions that involve returning to the place of origin (e.g., deer moving from winter grounds to summer ranges and fawning areas).

Wildlife movement corridors link areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or areas of human disturbance or urban development.

Topography and other natural factors in combination with urbanization can fragment or separate large open-space areas. The fragmentation of natural habitat can create isolated “islands” of vegetation and habitat that may not provide a sufficient area to accommodate sustainable populations and can adversely affect genetic and species diversity. Retaining wildlife movement corridors ameliorates the effects of such fragmentation by allowing animals to move between remaining habitats, which in turn allows depleted populations to recover. Such movement may also promote genetic exchange between separated populations.

The project area consists of three small sites along the Sutter Bypass, which is located in a broader agricultural region. The bypass provides aquatic and riparian habitat suitable for wildlife movement through the area. The proposed project’s scope and footprint are small relative to the available surrounding habitat, and much of the land in the project area is developed. The project would not substantially increase the developed footprint at the pumping plants or change existing wildlife movement corridors. Therefore, the proposed project would have no impact on wildlife movement corridors.

Special-Status Species

Special-status species are regulated under the federal Endangered Species Act (FESA) and California Endangered Species Act (CESA) or other regulations, or are species that are considered sufficiently rare by the scientific community to qualify for such listing. These species are classified in the following categories:

- Species listed or proposed for listing as threatened or endangered under the FESA (50 CFR 17.12 [listed plants], 50 CFR 17.11 [listed animals], and various notices in the *Federal Register* [FR] [proposed species])
- Species that are candidates for possible future listing as threatened or endangered under the FESA (61 FR 40, February 28, 1996)
- Species listed or proposed for listing by the State of California as threatened or endangered under the CESA (California Code of Regulations, Title 14, Section 670.5)
- Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.)
- Animal species of special concern to CDFW
- Animals fully protected under the California Fish and Game Code (Section 3511 [birds], Section 4700 [mammals], and Section 5050 [reptiles and amphibians])
- Species that meet the definitions of rare and endangered under CEQA; a plant or animal species may be treated as “rare or endangered” even if not on one of the official lists (CEQA Guidelines, Section 15380)
- Plants considered by CDFW and CNPS to be “rare, threatened, or endangered in California” (California Rare Plant Ranks 1A, 1B, and 2)

A list of special-status species that have the potential to occur in the project vicinity was compiled based on data contained in the CNDDB (CDFW, 2019a, 2019b, 2019c); the USFWS List of

Threatened and Endangered Species that May Occur in your Proposed Project Location, and/or May Be Affected by Your Proposed Project (USFWS, 2019a, 2019b, 2019c); and the CNPS online database of plant species (CNPS, 2019). **Table 3-4** provides a list of special-status species, their general habitat requirements, and an assessment of their potential to occur in the project area. Species with no potential to occur are not included. The analysis below also includes consideration of nesting birds regulated by the federal Migratory Bird Treaty Act (MBTA) and/or California Fish and Game Code.

The “Potential to Occur” categories are defined as follows:

- **Low Potential:** The project area provides only limited and low-quality habitat for a particular species. In addition, the known range for a particular species may be outside of the immediate project area.
- **Moderate Potential:** The project area and/or immediate vicinity provide suitable habitat for a particular species.
- **High Potential:** The project area and/or immediate vicinity provide ideal habitat conditions for a particular species and/or known populations occur in the project area or immediate vicinity.

Critical Habitat

Critical habitat is defined in Section 3(5)A of the FESA as a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. No designated critical habitat is present in the project area and the proposed project would have no impact on critical habitat.

TABLE 3-4
REGIONALLY OCCURRING SPECIAL-STATUS SPECIES

<i>Scientific Name</i> Common Name	Listing Status USFWS/ CDFW/CNPS	General Habitat	Potential to Occur in the Project Area
Reptiles			
<i>Emys marmorata</i> Western pond turtle	–/SSC/–	Found in slow-moving rivers, streams, lakes, ponds, wetlands, reservoirs, and brackish estuarine waters with deep pools and rocks, logs, and other exposed surfaces for basking.	High. Suitable habitat is present in the collecting canals at all of the pumping plant sites, and in the sump basin at Pumping Plant No. 3. During the March 2019 fieldwork, western pond turtles were observed in the collecting canals just outside the project area at Pumping Plant Nos. 2 and 3.
<i>Thamnophis gigas</i> Giant garter snake	T/T/–	Found in marshes, sloughs, drainage canals, irrigation ditches, rice fields, and slow-moving creeks.	High. Suitable habitat is present in the collecting canals at all of the pumping plant sites, and in the sump basin at Pumping Plant No. 3. Occurrence records in the CNDDb overlap the project area at Pumping Plant Nos. 1 and 2 (CDFW, 2019d).

**TABLE 3-4
REGIONALLY OCCURRING SPECIAL-STATUS SPECIES**

Scientific Name Common Name	Listing Status USFWS/ CDFW/CNPS	General Habitat	Potential to Occur in the Project Area
Birds			
<i>Athene cunicularia</i> Burrowing owl	–/SSC/–	Found in grasslands, agricultural field margins, and ruderal habitat supporting short vegetation structure and abundant small-mammal burrows. Usually nests in old burrows of ground squirrels.	Low. Very few burrows were observed in the project area during fieldwork. Burrows in the grassland and ruderal habitat could provide habitat for this species.
<i>Buteo swainsoni</i> Swainson's hawk	–/T/–	Found in cottonwood riparian forest and isolated trees in open grasslands adjacent to streams and agricultural crops for foraging.	Moderate. The only tree in the project area is a small black walnut at Pumping Plant No. 3. This tree provides marginal habitat because of its small size and location next to areas frequently disturbed by human activity. No evidence of past raptor nesting in this tree was observed during fieldwork. Nesting habitat is present adjacent to the project area in mature riparian trees along the Sutter Bypass; adjacent agricultural fields provide suitable foraging habitat.
<i>Elanus leucurus</i> White-tailed kite	–/FP/–	Nesting habitat includes oak woodlands and isolated trees along marsh edges and field margins. Foraging habitat includes grasslands, meadows, and agricultural fields.	Moderate. The only tree in the project area is a small black walnut located at Pumping Plant No. 3. This tree provides marginal habitat because of its small size and location next to areas frequently disturbed by human activity. No evidence of past raptor nesting in this tree was observed during fieldwork. Nesting habitat is present adjacent to the project area in mature riparian trees along the Sutter Bypass; adjacent agricultural fields provide suitable foraging habitat.
<i>Melospiza melodia</i> Song sparrow "Modesto population"	–/SSC/–	Emergent freshwater marshes dominated by tule (<i>Scirpus</i> spp., <i>Schoenoplectus</i> spp.) and cattail (<i>Typha</i> spp.) as well as riparian willow (<i>Salix</i> spp.) thickets. Also nests in riparian forests of valley oak (<i>Quercus lobata</i>) with a sufficient understory of blackberry (<i>Rubus</i> spp.), along vegetated irrigation canals and levees, and in recently planted valley oak restoration sites. Primary habitat requirement is moderately dense vegetation to supply cover for nest sites, a source of standing or running water, semi-open canopies to allow light, and exposed ground or leaf litter for foraging.	Moderate. No emergent marshes or riparian forests are present in the project area. The Himalayan blackberry brambles along the collecting canal at Pumping Plant No. 2 provide marginal nesting habitat for this species.

TABLE 3-4
REGIONALLY OCCURRING SPECIAL-STATUS SPECIES

Scientific Name Common Name	Listing Status USFWS/ CDFW/CNPS	General Habitat	Potential to Occur in the Project Area
Mammals			
<i>Antrozous pallidus</i> Pallid bat	–/SSC/–	Roosts in crevices in rocky outcrops; caves; mines; trees (including bole cavities of oaks, exfoliating ponderosa pine and valley oak bark, deciduous trees in riparian areas, and fruit trees in orchards); and various human structures, such as bridges, barns, and vacant buildings.	Moderate. Suitable roosting habitat is present in the abandoned control buildings at Pumping Plant Nos. 1 and 2.
Plants			
<i>Astragalus tener</i> var. <i>ferrisiae</i> Ferris's milk-vetch	–/–/1.B1	Annual herb found in vernal mesic meadows and seeps, and subalkaline flats in valley and foothill grasslands, typically on adobe soil. Occurs from 7 to 250 feet elevation. Blooms April through May.	Low. The alkaline soils in grassland habitat at Pumping Plant Nos. 2 and 3 provide limited habitat.
<i>Atriplex cordulata</i> var. <i>cordulata</i> Heartscale	–/–/1B.2	Annual herb found in saline or alkaline soils of chenopod scrub, meadows and seeps, and sandy valley and foothill grassland from 0 to 1,840 feet elevation. Blooms April through October.	Low. The alkaline soils in grassland habitat at Pumping Plant Nos. 2 and 3 provide limited habitat.
<i>Delphinium recurvatum</i> Recurved larkspur	–/–/1B.2	Perennial herb found in alkaline soils of chenopod scrub, cismontane woodland, and valley and foothill grassland from 10 to 2,600 feet elevation. Blooms March through June.	Low. The alkaline soils in grassland habitat at Pumping Plant Nos. 2 and 3 provide limited habitat. This species was not observed during the biological survey conducted during the evident and identifiable period. Recurved larkspur is not expected to occur in the project area.
<i>Extriplex joaquinana</i> San Joaquin spearscale	–/–/1B.2	Annual herb found in alkaline soils of chenopod scrub, meadows and seeps, playas, and valley and foothill grassland from 3 to 2,740 feet elevation. Blooms April through October.	Low. The alkaline soils in grassland habitat at Pumping Plant Nos. 2 and 3 provide limited habitat.
<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i> Woolly rose-mallow	–/–/1B.2	Emergent perennial rhizomatous herb found in freshwater marshes and swamps, often in riprap on sides of levees, from 0 to 390 feet elevation. Blooms June through September.	High. Occurrence records in the CNDDDB overlap the project area at Pumping Plant No. 1, and occur in the Sutter Bypass adjacent to Pumping Plant No. 2 (CDFW, 2019d). Suitable habitat is present in the sump basin at Pumping Plant No. 3 and in the collecting canals throughout the project area.
<i>Lepidium latipes</i> var. <i>heckardii</i> Heckard's pepper-grass	–/–/1B.2	Annual herb found in alkaline flats of valley and foothill grasslands from 6 to 650 feet elevation. Blooms March through May.	Low. The alkaline soils in grassland habitat at Pumping Plant Nos. 2 and 3 provide limited habitat. This species was not observed during the biological survey conducted during the evident and identifiable period. Heckard's pepper-grass is not expected to occur in the project area.

**TABLE 3-4
REGIONALLY OCCURRING SPECIAL-STATUS SPECIES**

Scientific Name Common Name	Listing Status USFWS/ CDFW/CNPS	General Habitat	Potential to Occur in the Project Area
Plants (cont.)			
<i>Puccinellia simplex</i> California alkali grass	—/—/1B.2	Annual herb found in alkaline, vernal mesic, sinks, flats, and lake margins in chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools from 5 to 3,050 feet elevation. Blooms March through May.	Low. The alkaline soils in grassland habitat at Pumping Plant Nos. 2 and 3 provide limited habitat. This species was not observed during the biological survey conducted during the evident and identifiable period. California alkali grass is not expected to occur in the project area.
<i>Sagittaria sanfordii</i> Sanford's arrowhead	—/—/1B.2	Emergent perennial rhizomatous herb found in assorted shallow, slow-moving freshwater marshes and swamps, ponds, and ditches from 0 to 2,130 feet elevation. Blooms May through October, and sometimes November.	Moderate. Suitable habitat is present in the sump basin at Pumping Plant No. 3 and in the collecting canals throughout the project area.

NOTES:

CDFW = California Department of Fish and Wildlife; CNPS = California Native Plant Society; USFWS = U.S. Fish and Wildlife Service

STATUS CODES:**FEDERAL (U.S. Fish and Wildlife Service):**

E = Endangered
T = Threatened
P = Proposed
D = Delisted
CH = Critical habitat designated for this species

STATE (California Department of Fish and Wildlife):

E = Endangered
T = Threatened
C = Candidate
SSC = Species of special concern
FP = Fully protected

California Native Plant Society (CNPS):

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 common elsewhere
Rank 2B = Plants rare, threatened, or endangered in California but more common elsewhere
Rank 3 = Plants about which more information is needed
Rank 4 = Plants of limited distribution

CNPS Code Extensions

.1 = Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
.2 = Fairly threatened in California (20–80% occurrences threatened)
.3 = Not very threatened in California (less than 20% of occurrences threatened or no current threats known)

SOURCE: Data compiled by Environmental Science Associates in 2019

Discussion

- a) Special-status species and their habitats that may be affected either directly or indirectly through implementation of the proposed project are Ferris' milk-vetch, heartscale, San Joaquin spearscale, woolly rose-mallow, Sanford's arrowhead, giant garter snake, western pond turtle, nesting birds regulated by the MBTA and California Fish and Game Code, burrowing owl, Swainson's hawk, white-tailed kite, song sparrow "Modesto population," and pallid bat and other roosting bats. In the event that special-status species occur in the project area, the impact of take of those species as a result of construction of the proposed project would be potentially significant.

These impacts are discussed separately below for special-status plants; giant garter snake; western pond turtle; white-tailed kite, Modesto song sparrow, birds listed by the MBTA, and birds of prey; burrowing owl; Swainson's hawk; and bats. Mitigation measures to reduce potentially significant impacts to **less than significant with mitigation incorporated** follow the last of these impact discussions.

Impacts on Special-Status Plants

Suitable habitat for a number of special-status plants occurs in the project area. Based on surveys conducted in the project area, a review of available databases and literature, and an on-site habitat suitability assessment, eight special-status plant species were determined to have the potential to occur in the project area (see Table 3-4). Three of these special-status plants were not observed during the biological resources survey conducted during the evident and identifiable period, and are not expected to occur in the project area. The survey was conducted outside the evident and identifiable period of five of the special-status plants. These species could potentially be present in the project area and not have been detected. Implementation of the proposed project could directly affect special-status plants if they are located in the project area. With implementation of Mitigation Measures BIO-1 through BIO-5, below, impacts on special-status plants would be less than significant with mitigation incorporated.

Impacts on Giant Garter Snake

There are dozens of CNDDDB occurrences of giant garter snake (GGS) within 5 miles of the project area (CDFW, 2019d). Most of these occurrences are located in canals between rice fields or in managed marsh habitat, including the 429-acre Sutter Basin Conservation Bank located approximately 0.5 mile north of Pumping Plant No. 1 and the 380-acre Gilsizer Slough South GGS Conservation Bank located approximately 2 miles south of Pumping Plant No. 2. Additionally, occurrence records in the CNDDDB overlap the project area at Pumping Plant Nos. 1 and 2 (CDFW, 2019d) and along the collecting canals between the pumping plant work areas. Figure 3-7 in the Biological Resources Survey Report (Appendix C) shows the location of these occurrences.

The collecting canals at all three pumping plant sites, and the sump basin at Pumping Plant No. 3, provide suitable aquatic habitat for GGS. The inlet basins at Pumping Plant Nos. 1 and 2 provide only marginal habitat because of their concrete substrate and lack of emergent vegetation. Suitable upland habitat for GGS is present in the project area on the banks of the collecting canals and adjacent grassland and ruderal habitat. Construction work could directly affect individual giant garter snakes. With implementation of Mitigation Measures BIO-6 through BIO-29, below, impacts on GGS would be less than significant with mitigation incorporated.

Impacts on Western Pond Turtle

The collecting canals at all three pumping plant sites and the sump basin at Pumping Plant No. 3 provide suitable aquatic habitat for western pond turtle. The inlet basins provide only marginal habitat because of their concrete substrate and lack of emergent

vegetation. The banks along the collecting canals and adjacent grassland and ruderal habitat provide upland habitat for western pond turtle. During the March 2019 fieldwork, western pond turtles were observed in the collecting canals just outside the work areas at Pumping Plant Nos. 2 and 3. Construction work could directly affect individual western pond turtles. With implementation of Mitigation Measures BIO-30 through BIO-33, impacts on western pond turtle would be less than significant with mitigation incorporated.

Impacts on White-Tailed Kite, Modesto Song Sparrow, Birds listed by the MBTA, and Birds of Prey

Under the MBTA, most bird species and their nests and eggs are protected from injury or death. California Fish and Game Code Sections 3503, 3503.5, and 3800 prohibit the possession, incidental take, or needless destruction of birds, their nests, and eggs.

Portions of the project area and the immediate vicinity have the potential to support nesting birds. Active cliff swallow (*Petrochelidon pyrrhonota*) colonies were observed on the structures at each of the pumping plant sites. The small black walnut tree at Pumping Plant No. 3 provides marginal nesting habitat for white-tailed kite because of its small size and location next to areas frequently disturbed by human activity. The Himalayan blackberry brambles along the collecting canal at Pumping Plant No. 3 provide marginal nesting habitat for Modesto song sparrow.

Direct impacts on nesting birds during the breeding season (generally between February 15 and September 14) could occur during initial project activities such as clearing and grubbing, and during active construction, including structure demolition, if an active nest is located near these activities. Nesting birds could be adversely affected if active nesting is either removed or exposed to a substantial increase in noise or human presence during project activities. Any disturbance that causes nest abandonment by migratory birds or raptors and subsequent loss of eggs or developing young would violate California Fish and Game Code Sections 3503, 3503.5, and 3800 and the MBTA. Consequently, impacts on nesting birds would be potentially significant. With implementation of Mitigation Measures BIO-34 through BIO-38, impacts on nesting birds, including white-tailed kite and Modesto song sparrow, would be less than significant with mitigation incorporated.

Impacts on Burrowing Owl

Marginal habitat for burrowing owl exists in and adjacent to the project area. Very few potential burrow sites that could be used by burrowing owl were observed in the project area during the biological resources survey, and no burrowing owls or their signs were observed. Direct impacts on burrowing owls could occur if occupied burrows are destroyed during project activities. Burrow abandonment could result from exposure to a substantial increase in noise or human presence during project activities. Any disturbance that causes burrowing owl nest abandonment and subsequent loss of eggs or developing young would violate California Fish and Game Code Sections 3503 and 3503.5 and the MBTA. With implementation of Mitigation Measures BIO-39 through BIO-42, impacts on burrowing owl would be less than significant with mitigation incorporated.

Impacts on Swainson's Hawk

The single tree at Pumping Plant No. 3 and the adjacent riparian corridor along the Sutter Bypass provide potential nesting habitat for Swainson's hawk. No evidence of current or past raptor nesting was observed in this tree during the biological survey. Noise and activities associated with project construction that occurs during the breeding season could disturb nesting Swainson's hawk if an active nest is located near these activities. Any disturbance that causes nest abandonment by Swainson's hawks and subsequent loss of eggs or developing young at active nests would violate the CESA; California Fish and Game Code Sections 2800, 3503, and 3503.5; and the MBTA. Consequently, impacts on Swainson's hawk would be potentially significant. With implementation of Mitigation Measures BIO-36 through BIO-38 and Mitigation Measures BIO-43 through BIO-45, impacts on Swainson's hawk would be less than significant with mitigation incorporated.

Impacts on Bats

Bats are protected by California Fish and Game Code Section 4150, which prohibits the take or possession of mammals occurring naturally in California that are not game mammals, fully protected mammals, or fur-bearing mammals. The human-made structures in the project area provide potential roosting habitat for bats, including pallid bat. A colony of an unidentified bat species was observed in the abandoned control building at Pumping Plant No. 1 during the field review conducted on October 18, 2018. The colony was using the narrow gap between the outside of the control building window and the board covering the window. This bat colony was not observed during the fieldwork conducted on March 14, 2019.

The proposed project would remove the abandoned control buildings, which could potentially be used for roosting by bats at the time of construction. In addition, construction-related activities would temporarily elevate noise levels in areas on and surrounding the construction zone. Special-status bat species may be adversely affected if roosting sites are physically disturbed or are exposed to a substantial increase in noise or human presence during project activities. Bat maternity colonies (April 1 to August 31) or hibernation roosts (November 1 to February 28) could be adversely affected if construction activities cause roost site abandonment. Because project implementation could adversely affect special-status bats, this impact would be potentially significant. With implementation of Mitigation Measures BIO-46 through BIO-50, impacts on bats would be less than significant with mitigation incorporated.

Mitigation Measure BIO-1: Perform Preconstruction Surveys for Special-Status Plants. A properly timed survey for special-status plants shall be conducted before construction, coinciding with the identification period of special-status plants with potential to occur in the project area. If no special-status plants are found, no further mitigation measures for special-status plants are required.

Mitigation Measure BIO-2: Avoid Special-Status Plants during Project Construction. If special-status plants are found during the survey, the plants shall be avoided to the maximum extent practicable during project construction. Environmentally Sensitive Areas (ESAs) shall be designated and established around

sensitive plant occurrences in the project area to exclude project activities. Temporary exclusionary fencing shall be installed to define the limits of the ESA.

Mitigation Measure BIO-3: Train Maintenance Personnel about Special-Status Plants. If special-status plants are identified, all maintenance personnel shall be instructed as to the location and extent of the plants or populations in the project area and the importance of avoiding impacts on the species and their habitat.

Mitigation Measure BIO-4: Maintain a Qualified Biologist On Call or On-Site if Special-Status Plants Occur. If special-status plants are identified during the preconstruction surveys, a qualified biologist shall be present or on call during project activities to provide guidance on avoiding special-status plants and ensure that other avoidance measures (e.g., buffers, fencing) are observed.

Mitigation Measure BIO-5: Coordinate with CDFW if Avoidance and Transplantation of Special-Status Plants is Not Feasible. If avoidance is not feasible, a plan shall be prepared for propagation and approved by CDFW. The plan shall have as success criteria the propagation of at least as many special-status plants as are impacted by the project.

Mitigation Measure BIO-6: Present Environmental Awareness Training for GGS to Construction Personnel. This training will instruct workers on how to recognize GGS and their habitat, how they can avoid adverse effects on the snake, and what to do if they encounter a snake. If a snake is encountered in any of the project areas, the qualified biologist will be contacted and construction activities will cease until the snake has left the area or the determination is made that the snake will not be harmed. DWR will report any sighting and any incidental take to USFWS and CDFW immediately by telephone: USFWS, (916) 414-6541; and CDFW, (916) 358-1340.

Mitigation Measure BIO-7: Minimize Vegetation Clearing and Ground Disturbance. Vegetation clearing and ground disturbance will be confined to the minimum area necessary to facilitate project activities.

Mitigation Measure BIO-8: Stage Vehicles and Equipment in Existing Staging Areas. Project activities and staging of materials, portable equipment, vehicles, and supplies will occur in disturbed areas where feasible. DWR maintenance staff members and a qualified biologist (approved by USFWS and CDFW) will ensure that appropriate best management practices (e.g., spill prevention and containment) are implemented in these areas to avoid contamination of GGS habitat.

Mitigation Measure BIO-9: Inspect Areas under Vehicles and Heavy Equipment for GGS. DWR maintenance staff members trained in awareness of GGS will inspect under and around all vehicles and heavy equipment for the presence of wildlife and other special-status species before the start of each workday. The awareness training provided by a qualified biologist will emphasize checking equipment to avoid harming wildlife.

Mitigation Measure BIO-10: Deposit Spoils in Areas that Do Not Provide GGS Habitat. When feasible, DWR maintenance staff members will deposit spoils in areas that do not provide suitable GGS upland habitat. Such areas include compacted

or gravel roadbeds and recently disked farm fields. If spoils disposal cannot occur as described for this measure, Mitigation Measure BIO-11 will be implemented as described below.

Mitigation Measure BIO-11: Monitor Spoils Disposal to Ensure Avoidance of Biologically Sensitive Areas. If biologically sensitive areas exist in the project area, excavated spoils will be placed to avoid these biologically sensitive areas where possible. A qualified biologist trained in GGS identification will monitor all spoils disposal.

Mitigation Measure BIO-12: Conduct Pre-activity Surveys for GGS before Grading Spoils Piles. Immediately before grading of deposited spoils piles, a qualified biologist will survey planned work areas for GGS and burrows. Additionally, a qualified biologist will monitor all work as it occurs. DWR grading of deposited spoils piles will occur only during periods when GGS are likely to be active in aquatic habitat. If GGS are observed before or during work, the “avoid and protect” mitigation measure below will be followed.

Mitigation Measure BIO-13: Avoid and Protect Individual GGS Found during Work. Upon request of the qualified biologist who observed a GGS in the area, or if a GGS is observed in the project area during the course of construction, DWR maintenance staff members will stop work within 200 feet of the snake and allow the snake to leave on its own volition. Alternatively, individuals who can handle and relocate GGS—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 GGS observation at one of the pumping plant sites. If the GGS does not leave the project area voluntarily and cannot be effectively captured and relocated unharmed (e.g., if the snake retreats into an underground burrow or below the water surface), project activities in the immediate vicinity of the GGS that may affect the snake will stop as needed to prevent harm to the snake, and USFWS and CDFW will be consulted.

Mitigation Measure BIO-14: Avoid Using Materials that May Entangle Snakes. Products with plastic monofilament or cross-joints in the netting that are bound/stitched (such as straw wattles, fiber rolls, or erosion control blankets), which could trap GGS or other wildlife, will not be used.

Mitigation Measure BIO-15: Remove Refuse. To eliminate sources that could attract wildlife, which may include GGS predators, all trash, including food-related trash items such as wrappers, cans, bottles and food scraps, will be disposed of in closed containers and removed at the end of each workday.

Mitigation Measure BIO-16: Time Ground-Disturbing Work Relative to the Active Season for GGS. Work conducted in potential GGS habitat will occur between May 1 and October 1. Work in the habitat may also occur between October 2 and November 1 or April 1 through April 30 if ambient air temperatures exceed approximately 75 degrees Fahrenheit (°F) during work and maximum daily air temperatures have exceeded approximately 75°F for at least 3 consecutive days immediately preceding work. During these periods, GGS are more likely to be active in aquatic habitats and less likely to be found in upland habitats. Depending on annual conditions, the rice fields surrounding the project area could be dry in early

May, reducing the likelihood for GGS to be present in the local area (GGS likely move to areas where there is rice). Beginning in April, DWR maintenance staff will mobilize equipment and material to the sites. No vegetation removal or ground disturbance will occur until May and following completion of biological surveys. If work needs to occur outside these periods, DWR will coordinate with USFWS and CDFW to determine whether additional mitigation measures are necessary.

Mitigation Measure BIO-17: Conduct Preconstruction Surveys for GGS and Delineate Biologically Sensitive Areas in Uplands. A qualified biologist will survey the planned worksites 24 hours before conducting any work in upland habitat that may support GGS. The surveys will target the presence of snakes. Mowing may first be required to increase the detectability of GGS. Mowing height will be no lower than 6 inches.

Mitigation Measure BIO-18: Monitor Work in Aquatic Habitat for GGS. As work is conducted, DWR staff members trained in the awareness of GGS and a qualified biologist will visually scan aquatic habitat in the project area for garter snakes. If garter snakes are observed, work will stop until the GGS has left the site on its own, or until a staff member with a handling permit moves it to another location.

Mitigation Measure BIO-19: Operate Excavators to Minimize Disturbance of GGS in the Active Season. Before lowering an excavator bucket, DWR maintenance staff members will lightly brush the bucket across the water surface of the canal and any associated floating aquatic vegetation. The excavator bucket will then be slowly lowered into the water until it encounters the bottom of the canal. DWR maintenance staff members and a qualified biologist will visually inspect excavated spoils for GGS while the spoils are being deposited. If GGS are observed, avoidance and protection measures will be implemented.

Mitigation Measure BIO-20: Dewater Habitat. Aquatic habitat in the work area will be dewatered. If the dewatering cannot remove all water, potential GGS prey (i.e., fish and tadpoles) will be removed so that GGS and other wildlife are not attracted to the project area. Once dewatered, the aquatic habitat will remain dry for at least 15 consecutive days before excavation or filling, unless consultation with CDFW and USFWS about the dewatered site conditions allows excavation to begin before the 15 consecutive days have passed.

Mitigation Measure BIO-21: Restore Temporarily Disturbed Habitat to Pre-project Conditions. After project work is completed, any temporary fill and construction debris will be removed, and disturbed areas will be restored to pre-project or better conditions. Before restoration, all non-biodegradable materials will be removed. Restoration may include recontouring disturbed areas to their original configurations.

Mitigation Measure BIO-22: Install, Inspect, and Maintain GGS Fencing. Where site conditions allow, DWR will install fencing along the project area boundaries as a way to divert moving snakes away from active construction zones. The project area, including the fencing, will be inspected by a qualified biologist daily during project activities.

Mitigation Measure BIO-23: Facilitate USFWS and CDFW Staff Visits. USFWS and CDFW may conduct site visits at any time during and after construction.

Mitigation Measure BIO-24: Retain a Qualified Biologist to Be Present during All Initial Ground Disturbance and Regularly Inspect the Project Area for the Presence of GGS. Following the initial ground disturbance, the biological monitor will be on-site daily and available for the duration of construction. If a GGS is encountered during construction activities, the biological monitor will stop construction activities until appropriate corrective measures have been completed or until it is determined that the snake will not be harmed.

Mitigation Measure BIO-25: Dispose of Diesel Fuel and Oil Properly. Diesel fuel and oil will be used, stored, and disposed of in accordance with standard protocols for handling hazardous materials. All personnel involved in the use of hazardous materials will be trained in emergency response and spill control.

Mitigation Measure BIO-26: Prevent Soil and/or Water Contamination. During construction activities, DWR maintenance staff members will prevent oil, grease, fuels, and other petroleum products; toxic chemicals; and any other substances that could be deleterious to aquatic life from contaminating the soil and/or entering waters of the State. DWR maintenance staff members will immediately remove such substances from any place where they could enter waters of the State and/or adversely affect fish and wildlife resources. DWR maintenance staff members will attempt to contain any releases or spills of such substances, and shall report any significant spills as soon as possible to the California Emergency Management Agency. In the event of a significant spill, work will cease immediately and workers will employ containment methods if it is safe to do so. DWR will notify the appropriate agencies within the regulatory time frames.

Mitigation Measure BIO-27: Use a Turbidity Curtain. If turbidity is expected to increase beyond baseline conditions, a turbidity curtain will be placed in the channel immediately upstream of the project to reduce impacts on water quality, and in-water work will be avoided to the extent practicable.

Mitigation Measure BIO-28: Place Excavated Materials in Upland Areas. All excavated material will be placed in upland areas where it will not likely be subject to regular flooding or mobilization of soluble metals or to affect groundwater, and will be stockpiled in disturbed areas.

Mitigation Measure BIO-29: Obtain and Comply with an Incidental Take Permit. DWR will obtain an incidental take permit or a consistency determination with the biological opinion from CDFW to cover those areas where there is the potential for take of GGS. Incidental take permits require CDFW to fully mitigate impacts. DWR will implement the measures associated with this permit.

Mitigation Measure BIO-30: Conduct Worker Education for Western Pond Turtle. A worker education and awareness program shall be provided to all on-site personnel by a qualified biologist before the commencement of materials staging or ground-disturbing activities. The biologist shall explain to construction workers how best to avoid impacts on western pond turtle and shall include topics on species identification, life history, descriptions, and habitat requirements during various life

stages. This education program can include handouts, illustrations, photographs, and project maps showing areas of minimization and avoidance measures. The crew members shall sign a sign-in sheet documenting that they received the training.

Mitigation Measure BIO-31: Conduct Preconstruction Survey for Western Pond Turtle. A qualified biologist shall conduct a preconstruction survey for western pond turtle within 24 hours before commencement of ground-disturbing activities.

Mitigation Measure BIO-32: Relocate Western Pond Turtles. If western pond turtles are detected in the project area during the preconstruction survey, the biologist shall relocate them to suitable habitat away from the construction zone, but in or near the project area on land managed by DWR.

Mitigation Measure BIO-33: Stop Work if Western Pond Turtles Are Found in the Project Area. If western pond turtles are observed in the project area during construction, DWR shall stop work within approximately 200 feet of the turtle, and a qualified biologist shall be notified immediately. The qualified biologist may capture and relocate the turtle as described in Mitigation Measure BIO-32. If the turtle does not voluntarily leave the maintenance area and cannot be captured and relocated unharmed, maintenance activities within approximately 200 feet of the turtle shall stop to prevent harm to the turtle, and CDFW shall be consulted to identify the next steps, if needed.

Mitigation Measure BIO-34: Establish Work Window for Nesting Birds. Project activities with the potential to disturb active bird nests, including vegetation removal and building demolition, should be completed between September 15 and February 14, if feasible. If project activities occur during the nesting season (February 15 to September 14), a qualified biologist shall conduct a preconstruction survey within 14 days before the beginning of work. Surveys shall be conducted in suitable nesting habitat that could be affected by project activities (e.g., staging areas, spoils areas, access routes) and shall include a 500-foot survey buffer for nesting birds of prey and a 100-foot survey buffer for all other protected birds. If the preconstruction survey shows no evidence of active nests, then no additional measures are recommended. If construction does not commence within 14 days of the preconstruction survey, or halts for more than 14 days, an additional preconstruction survey is recommended.

Mitigation Measure BIO-35: Prevent Establishment of Cliff Swallow Nests. Before construction, and during the non-nesting season, measures should be taken to prevent establishment of active cliff swallow nests on structures in the project area. Measures may include removing the remnant mud nests and installing exclusion netting (or other exclusion method developed in coordination with the qualified biologist). Exclusion netting should be installed and maintained throughout the nesting season or until the structures are demolished.

Mitigation Measure BIO-36: Conduct Worker Education if Active Nests Are Found. If any active bird nests are found in the survey area, a worker education and awareness program shall be provided to all on-site personnel by a qualified biologist before the commencement of materials staging or ground-disturbing activities. The biologist shall explain to construction workers how best to avoid impacts on nesting birds and shall include topics on species identification, life history, descriptions, and habitat requirements. This education program can include handouts, illustrations,

photographs, and project maps showing areas of minimization and avoidance measures. The crew members shall sign a sign-in sheet documenting that they received the training.

Mitigation Measure BIO-37: Establish Avoidance Buffers around Active Bird Nests. If any active nests are found in the survey area, an appropriate avoidance buffer zone shall be established around the nests, as determined by the qualified biologist. The biologist shall mark the avoidance buffer zone with construction tape or pin flags and shall maintain the buffer zone until the young have fledged or the nest is no longer active, as determined by the qualified biologist. Buffer zones are typically 500 feet for a bird of prey nest (with the exception of burrowing owl and Swainson's hawk, as described below), and 100 feet for all other protected birds. The qualified biologist may reduce the avoidance buffer based on the specific construction activities to be conducted and the species present. Guidance from CDFW is recommended if establishing the recommended buffer zone is impractical.

Mitigation Measure BIO-38: Monitor Project Activities that May Affect Nesting Birds. Project activities that may affect nesting birds shall be monitored by a qualified biologist either continuously or periodically during work, as determined by the qualified biologist. The qualified biologist shall be empowered to stop construction activities that, in the biologist's opinion, threaten to cause unanticipated and/or unpermitted nest abandonment. If activities are stopped, the qualified biologist shall consult with CDFW (and USFWS if appropriate) to determine appropriate measures that DWR will implement to avoid adverse effects.

Mitigation Measure BIO-39: Conduct Preconstruction Surveys for Burrowing Owl. Before project initiation, a qualified biologist shall conduct preconstruction take avoidance surveys in accordance with Appendix D of the CDFW *Staff Report on Burrowing Owl Mitigation* (CDFW, 2012). One survey shall be conducted no less than 14 days before the initiation of ground disturbance activities. A second survey shall be conducted within 24 hours before ground disturbance. If no burrowing owls are identified in or in the vicinity of the work area, no additional mitigation measures for burrowing owl are required.

Mitigation Measure BIO-40: Establish Buffer around Burrowing Owls and Active Burrows. If burrowing owls or active burrows are observed in maintenance areas, DWR should establish a buffer based on the activity dates and the level of disturbance in accordance with the CDFW *Staff Report on Burrowing Owl Mitigation* (CDFW, 2012) and described in **Table 3-5**. Activities that involve heavy equipment would be expected to constitute medium to high levels of disturbance for the species. Buffers shall 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. Maintenance activities shall not occur within the established buffer and workers shall avoid entering the area until a qualified biologist has determined that the burrows are unoccupied.

**TABLE 3-5
RECOMMENDED RESTRICTED ACTIVITY DATES AND SETBACK DISTANCES BY LEVEL OF
DISTURBANCE FOR BURROWING OWLS**

Time of Year	Distance of Disturbance (feet) from Occupied Burrows		
	Low Disturbance	Medium Disturbance	High Disturbance
April 1 to August 15	600	1,500	1,500
August 16 to October 15	600	600	1,500
October 16 to March 31	150	300	1,500

NOTES:

Low = Presence of maintenance staff on foot or in vehicles conducting work with light equipment (maintenance trucks, all-terrain vehicles).

Medium = Heavy equipment use with moderate noise levels (approximately 50–75 A-weighted decibels [dBA]).

High = Heavy equipment with high noise levels (greater than 75 dBA).

SOURCE: CDFW, 2012

Mitigation Measure BIO-41: Monitor Active Burrowing Owl Burrows if They Cannot be Avoided with the Minimum Buffers. If active burrows cannot be avoided with the minimum buffers indicated in Table 3-5, construction shall be monitored daily by a qualified biologist to ensure that burrowing owls are not disturbed.

Mitigation Measure BIO-42: Consult with CDFW if Complete Avoidance of Active Burrowing Owl Burrows is Not Feasible. If complete avoidance is not feasible, DWR shall consult with CDFW to determine the best approach to avoid and minimize potential impacts. Such measures may include passive relocation of owls during the nonbreeding season. Passive relocation of owls shall be conducted in accordance with an exclusion and relocation plan developed in coordination with and approved by CDFW. The relocation plan shall describe methods for passive relocation of the owls, destruction of suitable burrows, and maintenance of the site to prevent owl reoccupation.

Mitigation Measure BIO-43: Conduct Preconstruction Surveys for Swainson's Hawk. If construction activities are anticipated to commence during the Swainson's hawk nesting season (March 1 to September 15), a qualified biologist shall conduct a minimum of two preconstruction surveys during the recommended survey periods in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee, 2000). All potential nest trees within 0.25 mile of the project footprint shall be visually examined for potential Swainson's hawk nests, as accessible. If no active Swainson's hawk nests are identified in or within 0.25 mile of the project area, no further mitigation measures are recommended.

Mitigation Measure BIO-44: Establish Buffer between Active Swainson's Hawk Nests and Construction. Active Swainson's hawk nests should be buffered from construction activities by 0.25 mile to the extent feasible. The qualified biologist may reduce the avoidance buffer based on the specific construction activities to be conducted, barriers present between construction work and the nest, the nest stage, and other factors.

Mitigation Measure BIO-45: Monitor Construction within 0.25 Mile around Swainson's Hawk Nests. If work will occur within 0.25 mile of a Swainson's hawk nest, then construction shall be monitored daily by a qualified biologist until s/he feels comfortable that construction activities will not cause disturbance to the nest. Subsequent monitoring by the qualified biologist shall be conducted as determined necessary by the qualified biologist to ensure that no nest disturbance occurs.

Mitigation Measure BIO-46: Survey for and Exclude Bats. If feasible, within the year before construction, the structures should be surveyed for bats and/or bat sign by a qualified biologist. If evidence of bats is observed, exclusion measures using one-way exits should be implemented. Exclusion devices should be installed between March 1 and April 1, or between September 1 and November 1, which is outside of the maternity and hibernation season. If it is determined that the bats are not using the structure as a maternity or hibernation site, exclusion devices may be installed at any time. Exclusion devices should remain in place until the structures are demolished.

Mitigation Measure BIO-47: Remove Board Covering Window at Pumping Plant No. 1. If bats are not found to be occupying the narrow gap between the outside of the abandoned control building window and the board covering the window at Pumping Plant No. 1, the board should be removed to eliminate the potential roosting habitat.

Mitigation Measure BIO-48: Conduct a Preconstruction Survey for Bats. If exclusion devices are not installed during the windows specified in Mitigation Measure BIO-46, a preconstruction survey for bats shall be conducted within 14 days before project initiation to determine whether bats are using the structures. If no bats and/or bat signs are observed, no further mitigation measures for bats are needed. If construction does not commence within 14 days of the preconstruction survey, or if it halts for more than 14 days, a new survey is required.

Mitigation Measure BIO-49: Establish an Avoidance Buffer around Maternity and Hibernation Bat Roosts. If during the preconstruction survey it is determined that bats are using the structures as a maternity or hibernation roost, a minimum 250-foot avoidance buffer should be established around the roost/maternity until it is no longer occupied, as determined by the qualified biologist. The avoidance buffer may be reduced if a qualified biologist monitors the construction activities and determines that the roost is not being disturbed. Reduction of the buffer depends on the species of bat, the location of the roost relative to project activities, activities during the time the roost is active, and other project-specific conditions. No work shall occur in the buffer until it is determined that the bats have left on their own, or until the end of the hibernation or maternity season, at which time exclusion devices can be installed.

Mitigation Measure BIO-50: Exclude Bats from Structures before Construction. If during the preconstruction survey roosting bats are found and it is determined that they are not using the structures as a maternity or hibernation site, exclusion devices shall be installed a minimum of 48 hours before construction to ensure that the bats have time to leave before construction begins. Exclusion devices shall remain in place until the structures are demolished.

With implementation of Mitigation Measures BIO-1 through BIO-50, DWR would reduce the potential for significant impacts on special-status species by implementing

avoidance measures, including environmental training for construction workers; conducting preconstruction surveys for special-status species; establishing avoidance buffers; and monitoring construction to avoid take. Because development and operation of the proposed project with implementation of Mitigation Measures BIO-1 through BIO-50 would not adversely affect special-status species, this impact would be **less than significant with mitigation incorporated**.

- b) The collecting canals and inlet basins are considered to be a sensitive natural community because they are expected to be waters of the U.S. There is no riparian vegetation in the project area. The proposed project would result in temporary and permanent impacts on these aquatic features. As designed, the proposed project would result in a total of 0.134 acre of permanent impacts across the three pumping plant sites. Permanent impacts would result from construction of a new headwall in the concrete-lined inlet basin at Pumping Plant No. 1, partial fill of the sump at Pumping Plant No. 3, and placement of riprap along the banks of the inlet at Pumping Plant No. 3. No permanent impacts would occur at Pumping Plant No. 2. Temporary impacts would result from water diversion and dewatering, construction access, staging, and demolition of the abandoned control buildings. Before construction, DWR would obtain a CWA Section 404 permit for impacts on waters of the U.S. from USACE, a Section 401 water quality certification from the Central Valley Regional Water Quality Control Board, and a Section 1600 streambed alteration agreement from CDFW. DWR would comply with all conditions of permits received. Contamination and permanent fill of potential waters of the U.S. as a result of construction of the proposed project would be a potentially significant impact.

Mitigation Measure BIO-51: Erect Fencing at the Edge of the Project Footprint. High-visibility fencing shall be erected at the edge of the project footprint to prevent encroachment into unpermitted areas by construction equipment and personnel.

With implementation of Mitigation Measure BIO-51 and the best management practices (BMPs) listed in Chapter 2, DWR would reduce the potential for significant impacts on potential waters of the U.S. by preventing encroachment into unpermitted areas. Additionally, implementation of Mitigation Measures BIO-21 and BIO-26 through BIO-29 would reduce the potential for impacts on waters of the U.S. by restoring temporarily disturbed habitat, preventing soil and water contamination, and compensating for permanently impacted aquatic resources. Because the development and operation of the proposed project with implementation of Mitigation Measures BIO-21, BIO-26 through BIO-29, and BIO-51 would not adversely affect potential waters of the U.S., this impact would be **less than significant with mitigation incorporated**.

- c) There are no wetlands in the project area. The proposed project would have **no impact** on State or federally protected wetlands.
- d) The project area consists of three small sites along the Sutter Bypass, which is located in a broader agricultural region. The bypass provides aquatic and riparian habitat suitable for wildlife movement through the area. The proposed project's scope and footprint are small relative to the available surrounding habitat, and much of the project area is

developed. The proposed project would not interfere with the movement of wildlife or fish. The proposed project would have **no impact** on wildlife movement.

- e) Sutter County does not have a tree ordinance. The proposed project is consistent with policies in the Biological Resources and Open Space Element of the *Sutter County 2030 General Plan* (Sutter County, 2011) that promote the protection of wildlife, habitat and open space, special-status plants, aquatic habitat, and other biological resources. The proposed project would have **no impact** related to local policies or ordinances for biological resources.
- f) No adopted habitat conservation plans, natural community conservation plans, or other local conservation plans cover the project area. The proposed project would have **no impact**.

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Cultural Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
CULTURAL RESOURCES — Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

This section examines the potential impacts of the proposed project on cultural resources. Tribal cultural resources are discussed separately later in this chapter of the IS/MND. For purposes of this analysis, the term *cultural resource* is defined as follows:

Indigenous 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.

The term *indigenous*, rather than *prehistoric*, is used in this section as a synonym for “Native American–related” (except when quoting), while *pre-contact* is used as a chronological adjective to refer to the period before Euroamerican arrival in the subject area. *Indigenous* and *pre-contact* are often, but not always, synonymous: The former term refers to a cultural affiliation and the latter is chronological.

This section relies on the information and findings presented in the technical report Sutter Bypass Old Pumping Plant Removal and Gravity Drain Rehabilitation Project, Sutter County, California: Cultural Resources Inventory and Evaluation Report (Hoffman and Cleveland, 2019). This study included an overview of the environmental, ethnographic, and historic background of the project area, with an emphasis on aspects related to human occupation. More detailed information regarding the results of the cultural resources study can be found in that report.

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 project actions, including staging and access areas. The C-APE comprises approximately 2.74 acres, and extends vertically to the maximum depth of the proposed project’s ground-disturbing activities, varying according to specific location:

- 1.0 foot for the Phase I pipe extension to the new headwall and backfill with levee contour

- 6.0 feet for the Phase I weir/stop log structures and headwall for gravity drains
- 6.0 feet for the Phase II construction of weir/stop log structures
- 0.25 foot for staging and access routes

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 2015, as part of the *Environmental Permitting for Operations and Maintenance Draft Environmental Impact Report*, DWR conducted records searches of the California Historical Resources Information System (CHRIS) that included the C-APE with a 0.25-mile buffer. This work included records searches at the Northeast Information Center (NEIC), Chico State University. The NEIC maintains the CHRIS records relevant to the C-APE and vicinity.

The NEIC has no record of any previously recorded cultural resources within 0.25 mile of the C-APE. The NEIC has records of six cultural resources studies previously conducted within 0.25 mile of the C-APE. Five of these studies included some portion of the C-APE. No cultural resources were identified in the C-APE during any of these previous studies.

Ethnographic Literature Research

With respect to the C-APE, a review of ethnographic literature for the current investigation revealed the following:

- The Pumping Plant No. 1 portion of the APE is approximately 1.5 miles west of the documented Nisenan place *Ollash* (Wilson and Towne, 1978).
- The Pumping Plant No. 2 portion of the C-APE is approximately 4.8 miles east of the documented Patwin place *Ko-sim 'po* (Heizer and Hester, 1970).
- The Pumping Plant No. 3 portion of the C-APE is approximately 4.3 miles southwest of the documented Patwin place *O'no 'li* (Heizer and Hester, 1970).

Native American Correspondence

On November 19, 2018, DWR sent letters via certified mail to 15 representatives of California Native American tribes that had previously requested notification regarding DWR projects for potential consultation under Public Resources Code (PRC) Section 21080.3. These letters provided information about the proposed project and requested that the representatives notify DWR if they would like to consult pursuant to PRC Section 21080.3.

Environmental Science Associates (ESA) contacted the California Native American Heritage Commission (NAHC) on November 28, 2018, requesting a search of the NAHC's Sacred Lands File and a list of Native American representatives who may be interested in the proposed project. The NAHC replied to ESA on November 30, 2018, stating that the Sacred Lands File has no record of sacred sites in the C-APE. The reply also included a list of Native American representatives to contact regarding these resources and their potential interest in the proposed project.

On December 13, 2018, DWR sent letters to the Native American contacts identified in the NAHC's reply who had not been sent letters from DWR regarding potential consultation under PRC Section 21080.3. These letters included information about the proposed project and requested that the recipients inform DWR about any cultural resources that could be affected by the proposed project.

DWR received three responses from its outreach to Native American representatives regarding potential consultation on the proposed project pursuant to PRC Section 21080.3:

- On November 26, 2018, Jessica Mauck of the San Manuel Band of Mission Indians emailed DWR, stating that the tribe did not wish to consult on the proposed project.
- In a letter dated December 10, 2018, Leland Kinter of the Yocha Dehe Wintun Nation stated that the tribe did not wish to consult with DWR on the proposed project.
- In letters dated December 10 and December 27, 2018, United Auburn Indian Community of the Auburn Rancheria of California (UAIC) Chairperson Gene Whitehouse requested consultation between the UAIC and DWR on the proposed project.

On October 2, 2019, DWR sent an email to UAIC representatives Matthew Moore (Tribal Historic Preservation Officer), Melodi McAdamas, and Rebecca Adams. The email provided a summary of the cultural resources investigations for the proposed project; geographic information system data for the project; proposed mitigation measures (developed in consultation with UAIC on similar projects in the area); and a request asking how UAIC would like to proceed with consultation. On October 3, 2019, UAIC representative Anna Starkey responded to DWR by email, stating that UAIC believes there is low potential for the proposed project to affect cultural resources or tribal cultural resources, and that UAIC considers consultation on the proposed project, pursuant to PRC Section 21080.3, concluded.

The mitigation measures in the *Cultural Resources* and *Tribal Cultural Resources* sections of this IS/MND were developed in consultation with UAIC as part of proposed project consultation pursuant to PRC Section 21080.3.

Field Survey

In December 2018, an ESA archaeologist and an ESA architectural historian conducted a cultural resources pedestrian survey of the C-APE. The survey covered all portions of the C-APE. Intensive pedestrian survey methods were used by the archaeologist, who walked parallel transects spaced no more than approximately 50 feet apart and inspected the surface for cultural material or evidence thereof. When ground visibility was poor, cleared areas and areas disturbed by rodents along and between the transect lines were checked with special attention. Digital photographs were taken to document ground conditions, and all observations were recorded in the field. The architectural historian's survey focused on documenting visible architectural resources in the C-APE. The entire C-APE appears to have been previously disturbed, with DWR infrastructure (including pumping plants) occupying much of the area.

During the pedestrian survey, ESA identified one archaeological resource and three architectural resources in the APE. Draft site records were submitted to the NEIC, which provided primary

number assignments for the resources. The archaeological resource, P-51-000320, consists of the remnants of the historic-era building in the Pumping Plant No. 3 portion of the C-APE. The architectural resources consist of the historic-era pumping plants in the Pumping Plant No. 1 and Pumping Plant No. 2 portions of the C-APE (designated P-51-000318 and P-51-000319, respectively) and the East Levee of the Sutter Bypass.

Summary of Cultural Resources Identified

Through background research and a field survey conducted for the proposed project, four previously unrecorded cultural resources (P-51-000318, P-51-000319, P-51-000320, and the East Levee of the Sutter Bypass [P-51-000147]) were identified in the C-APE:

- P-51-000318, P-51-000319, and the East Levee of the Sutter Bypass are architectural resources:
 - P-51-000318 is a Sutter Bypass pumping plant within the Pumping Plant No. 1 portion of the C-APE.
 - P-51-000319 is a Sutter Bypass pumping plant within the Pumping Plant No. 2 portion of the C-APE.
 - The East Levee of the Sutter Bypass is a levee within all three portions of the C-APE. Additional research showed that the levee—though not those portions in the C-APE—was previously recorded as P-51-000147.
- P-51-000320 is an archaeological resource consisting of the remnants of a historic-era pumping plant within the Pumping Plant No. 3 portion of the C-APE.

These resources are described below and summarized in **Table 3-6**.

TABLE 3-6
SUMMARY OF CULTURAL RESOURCES IN THE CEQA AREA OF POTENTIAL EFFECTS

Primary #	Trinomial	Location in C-APE	Description	Previous California Register Eligibility	Updated California Register Eligibility
P-51-000318	[none]	Pumping Plant No. 1	Architectural: 1930s pumping plant building	Unevaluated	Not eligible
P-51-000319	[none]	Pumping Plant No. 2	Architectural: 1930s pumping plant building	Unevaluated	Not eligible
P-51-000147	CA-SUT-147H	Pumping Plant Nos. 1, 2, and 3	Architectural: Levee, East Levee of the Sutter Bypass	Unevaluated	Not eligible
P-51-000320	CA-SUT-320H	Pumping Plant No. 3	Archaeological: Remnants of 1930s pumping plant building	Unevaluated	Not eligible

NOTES:

C-APE = California Environmental Quality Act Area of Potential Effects; California Register = California Register of Historical Resources; CEQA = California Environmental Quality Act

SOURCE: Data compiled by Environmental Science Associates in 2018 and 2019

P-51-000318 and P-51-000319

P-51-000318 consists of a steel frame, reinforced concrete building on a concrete slab foundation, situated on the east (land) side of the Sutter Bypass East Levee in the Pumping Plant No. 1 portion of the C-APE. The oversized one-story building has a footprint of 40 feet by 15 feet and is oriented north-south, parallel to the levee. The building is positioned on top of a series of concrete discharge outlets, at the western edge of an L-shaped sump that measures 75 feet by 30 feet.

P-51-000319 is a steel frame, reinforced concrete building on a concrete slab foundation, situated on the east (land) side of the Sutter Bypass East Levee in the Pumping Plant No. 2 portion of the C-APE. The oversized one-story building has a footprint of 70 feet by 20 feet and is oriented north-south, parallel to the levee. The building is positioned on top of a series of concrete discharge outlets, at the western edge of an irregularly shaped sump that measures 90 feet by 100 feet, divided by a concrete weir.

ESA (2019) evaluated the significance of P-51-000318 and P-51-000319, recommending both as not eligible for listing in the California Register of Historical Resources (California Register), either as individual resources or as contributors to a potential Sacramento River Flood Control Project (SRFCP) historic district.

East Levee of the Sutter Bypass (P-51-000147)

Portions of the East Levee of the Sutter Bypass are present in all three portions of the C-APE (Pumping Plant Nos. 1, 2, and 3). Post-fieldwork research showed that segments of the East Levee had been previously recorded as P-51-000147, although none of the recorded portions are in or within 0.5 mile of the C-APE. P-51-000147 is present for approximately 300 feet, 290 feet, and 260 feet, respectively, in the Pumping Plant No. 1, Pumping Plant No. 2, and Pumping Plant No. 3 portions of the C-APE. The entire resource measures approximately 26.84 miles long.

The earthen East Levee has a trapezoidal profile, measuring approximately 60 feet tall and 20 feet wide at the crown, and 125 feet wide at the base. A gravel access road tops the levee crown, and unimproved dirt access roads flank either side of the levee at the base at various locations along the C-APE.

The East Levee of the Sutter Bypass is a portion of the SRFCP and, along with the West Levee, formalized a natural flood channel into the Sutter Bypass. The original levee was constructed by local residents in the early 1900s, although the exact construction dates and original builders for this initial work are not known. Before formal construction of the Sutter Bypass, in 1924 as part of the SRFCP, the area was a swampy marshland. The East Levee of the Sutter Bypass was constructed by the State in 1924, was enlarged by USACE in 1942, and in 1951 was returned to ownership by the State Reclamation Board (now Central Valley Flood Protection Board) (Pereira, 1976). Since the 1941/1942 construction, the levee has undergone repairs and improvements, including raising and widening, in response to events of excessive flooding.

ESA (2019) evaluated the significance of the East Levee of the Sutter Bypass (P-51-000147), recommending it not eligible for listing in the California Register, either as an individual resource or as a contributor to a potential SRFCP historic district.

P-51-000320

This archaeological resource consists of the remnants of DWR's Pumping Plant No. 3 building, within the Pumping Plant No. 3 portion of the C-APE. The resource comprises 10 steel I-beam piles, in two parallel, northwest-southeast-oriented rows of five piles each, with a newer metal trash guard (grates) around the perimeter. The resource measures approximately 32 feet by 18 feet, with its long axis oriented northwest-southeast. Only the feature described above is present at P-51-000320; no artifacts are present.

ESA (2019) evaluated the significance of P-51-000320, recommending it as not eligible for listing in the California Register, either as an individual resource or as a contributor to a potential SRFCP historic district.

Discussion

The following analysis discusses archaeological resources, both as historical resources, according to CEQA Guidelines Section 15064.5, as well as unique archaeological resources, as defined in PRC Section 21083.2(g), in response to checklist question b).

- a) Based on the results of the background research and field survey, three architectural resources older than 50 years of age have been identified in the C-APE:
 - *P-51-000318*, a Sutter Bypass pumping plant within the Pumping Plant No. 1 portion of the C-APE
 - *P-51-000319*, a Sutter Bypass pumping plant within the Pumping Plant No. 2 portion of the C-APE
 - *P-51-000147*, the East Levee of the Sutter Bypass, which is a levee within all three portions of the C-APE

All three resources have been evaluated as not eligible for the California Register, either as individual resources or as contributors to a potential SRFCP historic district; thus, none of the three qualify as a historical resource, as defined in CEQA Guidelines Section 15064.5. As such, no known historical resources, as defined in CEQA Guidelines Section 15064.5, are present in the C-APE. Therefore, **no impact** on historical resources would occur.

- b) Based on the results of the background research and field survey, one archaeological resource, P-51-000320, has been identified in the C-APE. P-51-000320 consists of the remnants of DWR's Pumping Plant No. 3 building, within the Pumping Plant No. 3 portion of the C-APE. The resource has been evaluated as not eligible for the California Register, either as an individual resource or as a contributor to a potential SRFCP historic district. As such, no known archaeological resources that may qualify as historical resources, as defined in CEQA Guidelines Section 15064.5, or unique archaeological

resources, as defined in PRC Section 21083.2(g), are present in the C-APE. Therefore, the proposed project would not affect any archaeological resource, pursuant to CEQA Guidelines Section 15064.5.

However, background research indicates that the C-APE is near several historically documented Native American villages. The proposed project would involve ground-disturbing activities that may extend into undisturbed soil; thus, it is possible that such actions could unearth, expose, or disturb subsurface archaeological resources that have not been identified on the surface. Because the potential exists for previously unrecorded archaeological deposits to be present in the C-APE, and for any such deposits found to qualify as archaeological resources pursuant to CEQA Guidelines Section 15064, impacts of the proposed project on the resources would be potentially significant.

Mitigation Measure CUL-1: Implement Unanticipated-Discovery Protocol for Archaeological Resources, including Potential Tribal Cultural Resources.

If indigenous or historic-era archaeological resources are encountered during development or operation of the proposed project, all activity within 100 feet of the find shall cease and the find shall be flagged for avoidance. DWR and a qualified archaeologist, defined as one meeting the U.S. Secretary of the Interior's Professional Qualifications Standards for Archeology and with expertise in California archaeology, shall be immediately informed of the discovery. The qualified archaeologist shall inspect the discovery and shall notify DWR of their initial assessment. Indigenous archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (midden) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include building or structure footings and walls, and deposits of metal, glass, and/or ceramic refuse. If the qualified archaeologist determines that the resource is or is potentially indigenous in origin, culturally affiliated California Native American Tribes shall be contacted to assess the find and determine whether it is potentially a tribal cultural resource.

If DWR determines, based on recommendations from the qualified archaeologist and culturally affiliated California Native American Tribes, that the resource is indigenous, that the resource may qualify as a historical resource or unique archaeological resource (as defined in CEQA Guidelines Section 15064.5), or that the resource is a tribal cultural resource (as defined in PRC Section 21074), then the resource shall be avoided if feasible. Avoidance means that no activities associated with the project may affect cultural resources within the boundaries of the resource or any defined buffer zones. DWR shall determine whether avoidance is feasible considering factors such as the nature of the find, project design, costs, and other considerations.

If avoidance of an identified indigenous resource is not feasible, DWR shall consult with a qualified archaeologist, culturally affiliated California Native American Tribes, and other appropriate interested parties to determine treatment measures to

minimize or mitigate any potential impacts on the resource pursuant to PRC Section 21083.2 and CEQA Guidelines Section 15126.4.

Once treatment measures have been determined, DWR shall prepare and implement an archaeological (and/or tribal cultural) resources management plan that outlines the treatment measures for the resource. Treatment measures typically consist of two steps:

- Determine whether the resource qualifies as a historical resource, unique archaeological resource, or tribal cultural resource through historical or ethnographic research, evaluative testing (excavation), and laboratory analysis.
- If it does qualify as one of these resource types, conduct data recovery (e.g., excavation, documentation, curation) targeting the recovery of the resource's important data.

The archaeological (and/or tribal cultural) resources management plan shall include all of the following elements:

- Background context.
- Research themes and research questions for assessing potential resource significance.
- Methods for evaluating the resource for California Register eligibility (e.g., ethnographic or historical research, evaluative test excavations, documentation, laboratory and geoarchaeological analyses, reporting) and, if an archaeological resource, for evaluating its eligibility as a unique archaeological resource under CEQA.
- Data recovery methods (e.g., background methods, field methods, laboratory methods, documentation, consultation, curation, reporting), if the resource is determined to be a historical resource, unique archaeological resource, or tribal cultural resource.

Any treatment measures implemented shall be documented in a professional-level technical report (e.g., archaeological testing results report, archaeological data recovery report, ethnographic report) to be authored by a qualified archaeologist and filed with CHRIS. Construction work at the location of the find may commence upon completion of the approved treatment and authorization by DWR. Work may proceed in other parts of the project area while the mitigation is being carried out.

If DWR determines during project implementation that portions of the project area may be sensitive for archaeological resources or tribal cultural resources, DWR may authorize construction monitoring of these locations by a qualified archaeologist and Native American monitor. Any monitoring by a Native American monitor shall be done under agreements between DWR and culturally affiliated California Native American Tribes.

With implementation of Mitigation Measure CUL-1, which was developed in consultation with UAIC as part of proposed project consultation pursuant to PRC Section 21080.3, DWR would reduce the potential for significant impacts on archaeological

resources by implementing a protocol for unanticipated discovery of archaeological resources. Because development and operation of the proposed project with implementation of Mitigation Measure CUL-1 would not adversely affect archaeological resources, this impact would be **less than significant with mitigation incorporated**.

- c) No human remains have been identified in the C-APE through archival research, field surveys, or Native American consultation. 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.

However, because the proposed project would involve ground-disturbing activities, it is possible that such actions could unearth, expose, or disturb previously unknown human remains. In the event that human remains were discovered during proposed project construction activities, impacts on the human remains resulting from the proposed project would be significant if those remains were disturbed or damaged.

Mitigation Measure CUL-2: Implement Unanticipated-Discovery Protocol for Human Remains.

If human remains are uncovered during construction, all work shall immediately halt within 100 feet of the find and the Sutter County Coroner shall be contacted to evaluate the remains and follow the procedures and protocols set forth in CEQA Guidelines Section 15064.5(e)(1). If the county coroner determines that the remains are Native American, Sutter County shall contact the NAHC, in accordance with California Health and Safety Code Section 7050.5(c) and PRC Section 5097.98. As required by PRC Section 5097.98, DWR shall ensure that further development activity avoids damage or disturbance in the immediate vicinity of the Native American human remains, according to generally accepted cultural or archaeological standards or practices, until DWR has conferred with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.

With implementation of Mitigation Measure CUL-2, DWR would reduce the potential for significant impacts on human remains through identification, consultation, and avoidance. Because development and operation of the proposed project with implementation of Mitigation Measure CUL-2 would not adversely affect human remains, this impact would be **less than significant with mitigation incorporated**.

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Energy

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
ENERGY — Would the project:				
a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

Sutter County uses a mixture of energy resources including electricity, natural gas, and solar energy. According to the California Energy Commission (CEC), Sutter County used approximately 634 million kilowatt-hours in 2018 (CEC, 2019). During that time period, the nonresidential sector accounted for 50 and 60 percent of total consumption. The county has two “peaker facilities” that are able to provide additional power during periods of high power demand in the state. Each facility is capable of producing up to 47,000 kilowatt-hours of energy. Pacific Gas and Electric Company provides electricity to local customers.

Sutter County also has four cogeneration facilities that are fueled by natural gas and support industrial or commercial uses, and generate surplus electricity.

Extensive natural gas resources are located throughout the western portion of the county. The future potential of natural gas resources in Sutter County is anticipated to be good (Sutter County, 2008).

Potential future energy sources include waste-to-energy and solar. Hydroelectric, geothermal, and wind energy production systems were looked at for the county and found to be not viable for large-scale energy production (Sutter County, 2008).

The transportation sector is one of the major consumers of energy in Sutter County.

A major theme seen throughout the CEC’s forecast period is the continuation of the current statewide shift toward electrification of transportation. This increased electrification across broad parts of the transportation sector drives the growing demand for transportation electricity and hydrogen in this forecast. It also leads to the forecast of decreasing gasoline demand through 2030 (CEC, 2018).

Discussion

- a) During construction of the proposed project, the use of construction tools and equipment, truck trips for hauling materials, and construction workers’ commutes to and from the project area would consume fuel. Project construction is anticipated to occur over 6 months (1 month at each of the three pumping plant sites during each of the two project phases).

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 project has no unusual characteristics that would require using construction equipment or haul vehicles that would be less energy efficient than equipment or vehicles used at similar construction sites elsewhere in California.

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**.

Once construction is complete, energy use at the three pumping plants would be similar to existing use levels. Automation of the gravity drain gates would use energy; previously, however, energy was brought in using generators to supply the torque to turn the manual gates. Thus, the energy used to open and close the gates would remain the same or drop slightly with the greater efficiency. Existing DWR staff would continue to make routine maintenance trips to the three pumping plants as they currently do; however, the number of maintenance trips would be reduced because of the installation of the trash racks. The new trash rack systems would allow the maintenance crews to use an excavator to clear large quantities of debris at a time periodically, rather than continually monitoring the pumping plants to remove debris by hand. A boom truck and excavator would be used to remove debris. Therefore, because the number of maintenance trips to the sites would be less than under existing conditions, it is anticipated that there would be less associated energy use compared to existing conditions. The proposed project would not use substantially more energy to operate than the existing pumping plants. This impact would be **less than significant**.

- b) The transportation sector is a major end user of energy in California, accounting for approximately 40.3 percent of total statewide energy consumption in 2017 (U.S. Energy Information Administration, 2019). In addition, energy is consumed during construction and maintenance of transportation infrastructure, such as streets, highways, freeways, rail lines, and airport runways. California's 30 million vehicles consume more than 16 billion gallons of gasoline and more than 3 billion gallons of diesel each year, making California the second largest consumer of gasoline in the world (CEC, 2016).

Existing transportation energy standards are promulgated through the regulation of fuel refineries and products, such as via the Low Carbon Fuel Standard, which mandates a 10 percent reduction in the non-biogenic carbon content of vehicle fuels by 2020. In addition, the U.S. Environmental Protection Agency and the California Air Resources Board have established other regulatory programs with emissions and fuel efficiency standards, such as Pavley II/Low-Emission Vehicle III from California's Advanced Clean Cars Program and the Heavy-Duty (Tractor-Trailer) Greenhouse Gas regulation. The California Air Resources Board has set a goal of 4.2 million zero-emission vehicles on the road by 2030 (CARB, 2016). Further, construction sites need to comply with State requirements designed to minimize idling and associated emissions, which also minimize

the use of fuel. Specifically, idling of commercial vehicles and off-road equipment are limited to 5 minutes in accordance with the Commercial Motor Vehicle Idling Regulation and the Off-Road Regulation (California Code of Regulations Title 13, Section 2485, updated through 2014). The proposed project is consistent with State regulations and would not impede progress toward achieving these goals. Sutter County has not implemented an energy action plan.

In conclusion, 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 goals and targets. This impact would be **less than significant**.

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- SACOG (Sacramento Area Council of Governments). 2016. 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy, Building a Sustainable System. February 18, 2016.
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Geology and Soils

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
GEOLOGY AND SOILS — Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

Regional Geology

Sutter County is located on the flat surface of the Great Valley geomorphic province of California. The Great Valley is an alluvial plain in central California that is approximately 50 miles wide and 400 miles long. The Great Valley's northern portion is the Sacramento Valley, drained by the Sacramento River, and its southern portion is the San Joaquin Valley, drained by the San Joaquin River.

The geology of the Great Valley is typified by thick sequences of alluvial sediments derived primarily from erosion of the Sierra Nevada to the east, and to a lesser extent, from erosion of the Klamath Mountains and Cascade Range to the north. These sediments were transported downstream and subsequently laid down as a river channel, floodplain deposits, and alluvial fans.

Seismic Hazards

Surface fault rupture (or disruption at the ground surface as a result of fault activity) and seismic ground shaking are considered primary seismic hazards by the State of California. The major hazards associated with earthquakes are surface fault rupture (ground displacement), ground motion (or ground shaking), ground failure (e.g., liquefaction), and landslides. Each of these hazards is discussed further below.

Surface Fault Rupture

Seismically induced ground rupture is defined as the physical displacement of surface deposits in response to an earthquake's seismic waves. The magnitude and nature of fault rupture can vary for different faults, or even along different strands of the same fault. Ground rupture is considered most likely along active faults. According to the *Sutter County General Plan Update Technical Background Report* (Sutter County, 2008), Sutter County does not contain any known active earthquake faults and no portion of the county is located within an Alquist-Priolo Earthquake Special Study Zone. As such, fault ground rupture is not considered a hazard in the project area.

Potential Ground Motion

Unlike surface rupture, ground shaking is not confined to the trace of a fault, but propagates into the surrounding areas during an earthquake. The intensity of ground shaking typically diminishes with distance from the fault, but ground shaking may be locally amplified and/or prolonged by some types of substrate materials. Based on historic data and known active or potentially active faults in the region, Sutter County has the potential to experience low to moderate ground shaking (Sutter County, 2008).

Liquefaction

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 can lead to severe settlement of foundations and slope failure. Properties such as depth to groundwater, soil texture and density, and sediment within and above the groundwater are the primary factors that determine whether an area is prone to liquefaction. The sediments most susceptible to liquefaction are saturated, unconsolidated sand and silt soils (particularly Quaternary-age units) with low plasticity within 50 feet of the ground surface (CGS, 2008). Liquefaction during an earthquake requires strong shaking and is not likely to occur in Sutter County because of the relatively low occurrence of seismic activity in the area. The soils in the project area are not highly susceptible to liquefaction (NRCS, 2019).

Earthquake-Induced Settlement

The relatively rapid compaction and settling of subsurface materials (particularly loose, noncompacted, and variable sandy sediments) during prolonged ground shaking can cause settlement of the ground surface. Typically, areas underlain by artificial fills, unconsolidated alluvial sediments, and slope wash, and areas with improperly engineered construction fills are susceptible to settlement. Because the potential for ground shaking in Sutter County is low to moderate, it is unlikely that subsequent ground failure would occur.

Slope Instability and Landslides

Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material, triggered by either static (i.e., gravity) or dynamic (i.e., earthquake) forces. Exposed rock slopes undergo rockfalls, rockslides, or rock avalanches, while soil slopes experience shallow soil slides, rapid debris flows, and deep-seated rotational slides. In general, Sutter County is located in a landslide-free zone because of its flat topography (Sutter County, 2008).

Soils and Soil-Related Hazards

The soils underlying the Sutter Bypass basin are almost entirely of the Oswald-Gridley-Subaco complex on basins and on basin rims. These soils are composed of moderately deep, level to nearly level, poorly drained and moderately well-drained clay and clay loam. At the extreme northern end of the bypass, the soils fall under the Shanghai-Nueva-Columbia complex formed on floodplains. These soils are very deep, level to nearly level, and somewhat poorly drained silt loam, loam, and fine sandy loam. Soils underlying the area around Pumping Plant No. 1 are of the San Joaquin-Cometa complex and are moderately deep and very deep, level to nearly level, well-drained sandy loam and loam.

Erosion

Erosion is the detachment and movement of soil materials through natural processes or human activities. In general, rates of erosion can vary depending on the soil resource's capacity to drain water, slope angle and length, extent of ground cover, and human influence. Soils underlying the area around Pumping Plant No. 1 comprise Yuvas loam, 0 to 2 percent slopes, which has moderate erosion potential. Soils underlying the area around Pumping Plant No. 2 comprise Subaco clay, 0 to 2 percent slopes, which has low erosion potential. Soils underlying the area around Pumping Plant No. 3 comprise Oswald clay, 0 to 2 percent slopes, which has low erosion potential (NRCS, 2019).

Expansive Soils

Expansive soils are characterized by a characteristic called “shrink-swell.” Over a long time period, structural damage may result, usually from inadequate soil and foundation engineering or the placement of structures directly on expansive soils. Expansive soils consist primarily of clays, which expand in volume when water is absorbed and shrink when dried. Soil resources in the project area consist primarily of loams, with smaller areas of clays (NRCS, 2019).

Corrosive Soils

Corrosive soils can damage underground pipelines and cables, and can weaken roadway structures. The soils in the project area have moderate to high potential to erode steel and low potential to corrode concrete (NRCS, 2019).

Land Subsidence

Subsidence is the gradual lowering of the land surface caused by loss or compaction of underlying materials. Subsidence can result from groundwater, gas, and or oil extraction, or from the decomposition of highly organic soils. Sutter County is not subject to high subsidence because a few of the factors that cause subsidence do not exist in the county. Although Sutter

County contains several natural gas withdrawal locations, the gas fields are spread out over a large area and do not individually generate high volumes of gas. Sutter County does not have oil withdrawal drawdown. Groundwater drawdowns do occur; however, substantial recharge is provided by the Sacramento and Feather Rivers and by snowmelt. In addition, a large portion of Sutter County does not rely on groundwater (Sutter County, 2008).

Paleontological Resources

Paleontological resources are limited, nonrenewable resources of scientific, cultural, and educational value that are afforded protection under State laws and regulations. The following discussion summarizes applicable federal and State laws and regulations, as well as professional standards provided by the Society of Vertebrate Paleontology (SVP).

Paleontological resources are the fossilized remains or impressions of plants and animals: vertebrates (animals with backbones, such as mammals, birds, and fish), invertebrates (animals without backbones, such as starfish, clams, and coral), and microscopic plants and animals (microfossils). These are valuable, nonrenewable, scientific resources used to document the existence of extinct life forms and to reconstruct the environments in which they lived. Researchers can use fossils to determine the relative ages of the depositional layers in which the fossils are present and the approximate dates of the geologic events that created those deposits. The age, abundance, and distribution of fossils depend on the geologic formation in which they occur and the topography of the area in which they are exposed. The geologic environments within which plants or animals became fossilized usually were quite different from the present environments in which the geologic formations now exist.

Paleontological sensitivity is defined as the potential for a geologic formation to produce scientifically important fossils. This is determined by the rock type, the past history of the geologic unit in producing significant fossils, and the fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey. In its *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*, the SVP (2010:1–2) defines four categories of paleontological sensitivity for rock units, reflecting their potential for containing additional significant paleontological resources:

- **High Potential:** Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered.
- **Low Potential:** Rock units that are poorly represented by fossil specimens in institutional collections, or that based on general scientific consensus only preserve fossils in rare circumstances, with the presence of fossils being the exception, not the rule.
- **Undetermined Potential:** Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment.
- **No Potential:** Rock units such as high-grade metamorphic rocks (e.g., gneisses and schists) and plutonic igneous rocks (e.g., granites and diorites) that will not preserve fossil resources.

The surficial geology of the project area has been mapped by the California Geological Survey at scales of 1:100,000 (Gutierrez, 2011) and 1:250,000 (Saucedo and Wagner, 1992). The surface of the project area is composed of Holocene alluvium, with outcrops of the Modesto Formation northwest and west of the project area. Riverbank Formation is also mapped at the surface at the location of Pumping Plant No. 1. The Modesto and Riverbank Formations have high paleontological sensitivity based on the presence of vertebrate fossils found within the formations (Sutter County, 2010; EDAW, 2009:4.5-5 through 4.5-7).

Discussion

- a.i) The project area is not located within an earthquake fault zone as delineated on Alquist-Priolo earthquake fault zoning maps. The closest active fault to the project area is the Hunting Creek Section (Hunting Creek Fault) of the Hunting Creek–Berryessa fault system, approximately 40 miles to the southwest. Because the proposed project would demolish the existing control buildings and rehabilitate the gravity drain system, it would not increase the risk of surface rupture or exposure of people to loss, injury, or death involving rupture of a known fault. **No impact** would occur.
- a.ii) According to the Sutter County General Plan EIR, Sutter County has low to moderate potential to experience ground shaking. Moderate seismic ground shaking could occur in the project area because the active Hunting Creek Fault is approximately 40 miles southwest of the project area. Although the project area is moderately seismically active, none of the project components would be used for human occupancy, nor would any project components exacerbate the existing risk of seismic shaking or associated damage. This impact would be **less than significant**.
- a.iii) Liquefaction during an earthquake requires strong shaking and is not likely to occur in Sutter County because of the relatively low occurrence of seismic activity in the area. The soils in the project area are not highly susceptible to liquefaction. Because of the low to moderate risk of strong seismic ground shaking in the area, the potential for liquefaction or seismically induced settlement is also low. The proposed project would demolish the existing control buildings and rehabilitate the gravity drain system and would not include the construction of any habitable structures.

Although the project does not propose to erect any buildings or structures that would be occupied by people for any substantial length of time, it remains under the purview of the California Building Code (CBC) because the pumping plants are considered structures (Health and Safety Code Section 18908). The provisions of the CBC apply to the construction, alteration, movement, replacement, repair, location, maintenance, and demolition of every building or structure, or any appurtenances connected or attached to such buildings or structures, throughout California.

Project components would be required to adhere to the most current version of the CBC, which includes specifications and seismic design criteria (e.g., site preparation measures and foundation design) created to minimize damage from anticipated ground shaking and the secondary effects of liquefaction. Therefore, the project design would not exacerbate

liquefaction hazards and would incorporate seismic design criteria in accordance with building code requirements to limit potential damage. This impact would be **less than significant**.

- a.iv) A landslide is any type of ground movement that occurs primarily as a result of gravity acting on relatively weak soils and bedrock on an oversteepened slope. Often, slopes become unstable or slope instability accelerates as a result of soil saturation and groundwater pressure, although grading activity (e.g., removal of toe support by excavation) or the addition of a new load (e.g., fill placement) may also aggravate slope instability. Areas that are more prone to landslides include old landslides, the bases or tops of steep or filled slopes, and drainage hollows.

Because the topography of the project area is relatively flat, landslides are not expected to affect any project components, nor would the proposed project directly or indirectly cause substantial adverse effects related to landslides, seismically induced or otherwise. Therefore, **no impact** would occur.

- b) Project construction activities would require land-disturbing activities such as grading and excavation that could increase the susceptibility of soils to erosion by wind and/or water, and subsequently result in substantial soil loss or erosion. As noted in Chapter 2, *Project Description*, ground disturbance is anticipated to total less than one acre, but could exceed one acre.

If the proposed project would disturb less than one acre, it would not be subject to conditions of a National Pollutant Discharge Elimination System (NPDES) Construction General Permit. However, implementation of the following mitigation measures listed in the *Biological Resources* section of this IS/MND would minimize erosion and loss of topsoil:

- Mitigation Measure BIO-27 requires the use of a turbidity curtain if turbidity is expected to increase beyond baseline conditions.
- Mitigation Measure BIO-28 requires that excavated material be placed in upland areas where it will not likely be subject to regular flooding or mobilization of soluble metals or to affect groundwater, and will be stockpiled in disturbed areas.

Implementation of these mitigation measures and the best management practices (BMPs) that are identified in Chapter 2, and that could also be required as part of the Section 401 water quality standards certification, would minimize impacts related to soil erosion or loss of topsoil.

Although Mitigation Measures BIO-27 and BIO-28 and the BMPs identified in Chapter 2 would be sufficient to reduce project impacts related to soil erosion or loss of topsoil to less than significant, if the proposed project would disturb more than one acre, the construction contractor would be required to obtain an NPDES Construction General Permit from the Central Valley Regional Water Quality Control Board before initiating

earth-disturbing activities. Similar to Mitigation Measures BIO-27 and BIO-28 and the BMPs in Chapter 2, the conditions of the permit would include mandatory implementation of BMPs applicable to erosion control and preparation of a storm water pollution prevention plan (SWPPP) to prevent sediment from entering stormwater runoff. Compliance with the NPDES Construction General Permit, including implementation of BMPs described in the SWPPP, would ensure that the project would avoid and/or minimize the potential impact of soil erosion or the loss of topsoil during construction.

Therefore, with implementation of Mitigation Measures BIO-27 and BIO-28 and the BMPs identified in Chapter 2, or compliance with an NPDES Construction General Permit, this potential impact related to soil erosion or loss of topsoil would be **less than significant**.

- c) As discussed in response to checklist question a) iv) above, the topography of the project area is relatively flat and the proposed project would not cause or be subject to any landslide hazards. Lateral spreading, a condition related to liquefaction, and liquefaction are addressed in response to checklist question a) iii) above. Collapse from subsidence is generally the result of groundwater or oil extraction or of construction on materials that are susceptible to collapse. Construction of the proposed project would include dewatering the concrete-lined inlet basin at Pumping Plant Nos. 1 and 3 and the gravity drains at Pumping Plant No. 3. However, the proposed project would not include any groundwater or oil extraction, nor would any project components be located on materials susceptible to collapse. The project would not exacerbate any potential for lateral spreading or liquefaction, and adhering to CBC requirements would minimize any adverse effects of these hazards on the proposed improvements. Therefore, based on the characteristics of the proposed project and project area, and with adherence to CBC requirements, this impact would be **less than significant**.
- d) Expansive soils are soils that possess a “shrink-swell” characteristic, also referred to as linear extensibility. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying. Expansive soils are typically very fine-grained and have a high to very high percentage of clay. Linear extensibility is used to determine the shrink-swell potential of soils. If the linear extensibility rating is more than 3 percent, shrinking and swelling may damage buildings, roads, and other structures (NRCS, 2019). According to the Natural Resources Conservation Service’s Web Soil Survey, the soils present at Pumping Plant No. 1 have a low linear extensibility rating (NRCS, 2019). However, soils at Pumping Plant Nos. 2 and 3 have a high linear extensibility rating (NRCS, 2019).

As discussed in response to checklist question a.iii), the proposed project would comply with the most current version of the CBC, which includes specifications and seismic design criteria (e.g., site preparation measures and foundation design) created to minimize damage from the anticipated effects of soil expansion. Any potential damage from soil expansion would be minimized by implementing building code requirements. Therefore, this impact related to soil expansion would be **less than significant**.

- e) The proposed project would not include any elements that would require a septic or other alternative wastewater system. Therefore, **no impact** would occur related to soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems.
- f) Holocene-age alluvial deposits are mapped at the surface within the project footprint. These deposits have low to high paleontological sensitivity; the paleontological sensitivity increases with depth, with older, high-sensitivity Pleistocene alluvium present at depth. In addition, the Modesto Formation is mapped approximately 1–2 miles east of the project area, and may be present at depth. The Riverbank Formation is present within the footprint of Pumping Plant No. 1. The Modesto and Riverbank Formations have high paleontological sensitivity based on the presence of vertebrate fossils found within the formations (Sutter County, 2010; EDAW, 2009:4.5-5 through 4.5-7). The geotechnical studies would carefully excavate to 12 feet, specifically examining the soils with an observer qualified to identify fossil-bearing strata. During construction, ground-disturbing activity is anticipated to occur up to 6 feet deep in parts of the project area; therefore, such activity would disturb the Riverbank Formation and may disturb the Modesto Formation. While excavation is anticipated to be up to 6 feet deep, the area to be excavated is limited to approximately 0.01 acre, with approximately 534 cubic yards of excavation (see Table 2-2). Given the limited extent of the planned ground disturbance, the possibility of encountering paleontological resources is reduced. While the possibility of encountering paleontological resources is low, given the limited area to be excavated, paleontological resources may still be encountered. In the event that fossils are encountered during excavation, they could be inadvertently damaged, which would be considered a significant impact.

Mitigation Measure PALEO-1: Address Inadvertent Discovery of Paleontological Resources during Construction.

If paleontological resources, such as fossilized bone, teeth, shell, tracks, trails, casts, molds, or impressions are discovered during ground-disturbing activities, work shall stop in that area and within 100 feet of the find until a qualified paleontologist meeting the Society of Vertebrate Paleontology (SVP) standards, can assess the nature and importance of the find and, if necessary, develop appropriate salvage measures in conformance with SVP standards (2010). If the discovery can be avoided and no further impacts will occur, no further effort shall be required. If the resources cannot be avoided and may be subject to further impact, a qualified paleontologist shall evaluate the resource and determine whether it is “unique” under CEQA.

With implementation of Mitigation Measure PALEO-1, DWR would reduce the potential for significant impacts on paleontological resources by stopping work if any paleontological resources are discovered during construction activities, and having a qualified paleontologist assess the nature of the discovery. Because development and operation of the proposed project with implementation of Mitigation Measure PALEO-1 would not adversely affect paleontological resources, this impact would be **less than significant with mitigation incorporated**.

References

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- SVP (Society of Vertebrate Paleontology). 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources.

Greenhouse Gas Emissions

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
GREENHOUSE GAS EMISSIONS — Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

“Global warming” and “global climate change” are the terms used to describe the increase in the average temperature of the earth’s near-surface air and oceans since the mid-20th century and its projected continuation. Warming of the climate system is now considered unequivocal (IPCC, 2007). Natural processes and human actions have been identified as the causes of this warming. The Intergovernmental Panel on Climate Change has concluded that variations in natural phenomena such as solar radiation and volcanoes produced most of the warming from preindustrial times to 1950 and had a small cooling effect afterward. However, increasing greenhouse gas (GHG) concentrations resulting from human activity such as fossil fuel burning and deforestation are believed to be responsible for most of the observed temperature increase since 1950.

Increases in GHG concentrations in the earth’s atmosphere are thought to be the main cause of human-induced climate change. Certain gases in the atmosphere naturally trap heat by impeding the exit of solar radiation that has hit the earth and is reflected back into space. This is sometimes referred to as the “greenhouse effect” and the gases that cause it are called “greenhouse gases.” Some GHGs occur naturally and are necessary for keeping the earth’s surface habitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years have reduced the amount of solar radiation that is reflected back into space, intensifying the natural greenhouse effect and resulting in an increase in global average temperature.

Carbon dioxide (CO₂), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are the principal GHGs. When concentrations of these gases exceed natural concentrations in the atmosphere, the greenhouse effect may be intensified. CO₂, methane, and nitrous oxide occur naturally, and are also generated through human activity. Emissions of CO₂ are largely byproducts of fossil fuel combustion, whereas methane results from off-gassing associated with agricultural practices and landfills. (Off-gassing is defined as the release of chemicals under normal conditions of temperature and pressure.) Other human-generated GHGs include fluorinated gases such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, which have much higher heat-absorption potential than CO₂, and are byproducts of certain industrial processes.

CO₂ is the reference gas for climate change because it is the predominant GHG emitted. The potential effect of each of the aforementioned gases on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a pound-

for-pound basis, how much a gas is predicted to contribute to global warming relative to the amount of warming predicted to be caused by the same mass of CO₂. For example, methane and nitrous oxide are substantially more potent GHGs than CO₂, with respective GWPs of 25 and 298 times that of CO₂ (CARB, 2018).

In emissions inventories, GHG emissions are typically reported in terms of pounds or metric tons of CO₂ equivalents (CO₂e). CO₂e is calculated as the product of the mass emitted of a given GHG and its specific GWP. Although methane and nitrous oxide have much higher GWPs than CO₂, CO₂ is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO₂e from human activity in general.

Discussion

- a) The impact of GHG emissions is inherently cumulative. GHG emissions worldwide cumulatively contribute to the significant adverse environmental impacts of global climate change. No single project could generate sufficient GHG emissions on its own to cause noticeable impacts. The combination of GHG emissions from past, present, and future projects in Sutter County, in the entire state of California, across the nation, and around the world contribute cumulatively to the phenomenon of global climate change and its associated environmental impacts.

Construction of the proposed project would generate emissions of GHGs such as CO₂, methane, and nitrous oxide from the combustion of fossil fuels. Project construction is expected to take place over a period of approximately 3 months each year over 2 years. During this time, the project would generate GHG emissions from the transport and delivery of construction equipment and materials to the pumping plant sites, operation of construction equipment, and worker trips, all of which would use fossil fuels. Construction emissions associated with the proposed project were estimated using CalEEMod based on the information about project-specific equipment. CalEEMod defaults were used when project-specific information was not available. **Appendix A** presents the inputs to and output from the CalEEMod model. Error! Reference source not found. **Table 3-7** presents construction emissions for the proposed project for each construction year from on-site and off-site emission sources. As shown, project construction would generate a total of approximately 297 metric tons of CO₂e over the entire construction period. Automation of the gravity drain gates would use energy; previously, however, energy was brought in using generators to supply the torque to turn the manual gates. Thus, the energy used to open and close the gates would remain the same or drop slightly because of the greater efficiency.

Neither Sutter County nor FRAQMD have adopted significance thresholds for GHG emissions. The neighboring Sacramento Metropolitan Air Quality Management District recommends a GHG significance threshold of 1,100 metric tons of CO₂e per year (SMAQMD, 2009). When compared to this threshold, the proposed project's construction and operational impact with respect to generation of GHG emissions would be **less than significant**.

TABLE 3-7
TOTAL ESTIMATED GREENHOUSE GAS EMISSIONS FROM CONSTRUCTION

Source	GHG Emissions (metric tons) CO ₂ e
2021 Project Emissions	158.4
2022 Project Emissions	138.6
Total Project Emissions	297.0

NOTES: CO₂e = carbon dioxide equivalents; GHG = greenhouse gas
SOURCE: Data compiled by Environmental Science Associates in 2019 (see Appendix A)

DWR's GHG emissions reduction plan, discussed in greater detail in response to checklist question b) below, considers projects that generate 25,000 metric tons of CO₂e over the entire project construction period or 12,500 metric tons of CO₂e in any single construction year to be "extraordinary construction projects." Such extraordinary projects are not included in the GHG emissions reduction plan and are not eligible to use the plan to streamline the cumulative impacts analysis of later projects under CEQA. Based on this threshold, the proposed project would not be considered an "extraordinary project." Therefore, the impact of the project's GHG emissions is discussed with respect to consistency with DWR's GHG emissions reduction plan in accordance with CEQA Guidelines Section 15183.5(b)(1). See checklist question b) below.

- b) Goals in the Environmental Resources and Infrastructure Elements of the *Sutter County 2030 General Plan* address energy conservation, air quality, and control of GHG emissions (Sutter County, 2011). To achieve these goals, Sutter County adopted a climate action plan in 2010. Measure R2-W2, *Construction Diversion Program*, in the Sutter County Climate Action Plan encourages diversion of 60 percent of construction waste by 2020, 10 percent beyond State waste reduction mandates. None of the other goals and measures are relevant to the proposed project.

In May 2012, DWR adopted the *Climate Action Plan Phase I: Greenhouse Gas Emissions Reduction Plan* (GGERP), which details DWR's efforts to reduce its GHG emissions consistent with Executive Order S-3-05 and the Global Warming Solutions Act of 2006 (Assembly Bill 32). DWR also adopted the IS/negative declaration (ND) prepared for the GGERP in accordance with the CEQA Guidelines' review and public process. Both the GGERP and the IS/ND are incorporated herein by reference and are available at: <http://www.water.ca.gov/climatechange/CAP.cfm>.

The GGERP provides estimates of historical (back to 1990), current, and future GHG emissions related to operations, construction, maintenance, and business practices (e.g., building-related energy use). The GGERP specifies aggressive 2020 and 2050 emissions reduction goals and identifies a list of GHG emissions reduction measures to achieve these goals.

DWR specifically prepared its GGERP as a “Plan for the Reduction of Greenhouse Gas Emissions” for purposes of CEQA Guidelines Section 15183.5. That section provides that such a document, which must meet certain specified requirements, “may be used in the cumulative impacts analysis of later projects.” Because global climate change, by its very nature, is a global cumulative impact, an individual project’s compliance with a qualifying GHG reduction plan may suffice to mitigate the project’s incremental contribution to that cumulative impact to a level that is not “cumulatively considerable.” (See CEQA Guidelines Section 15064[h][3].)

More specifically, “[l]ater project-specific environmental documents may tier from and/or incorporate by reference” the “programmatic review” conducted for the GHG emissions reduction plan. “An environmental document that relies on a greenhouse gas reduction plan for a cumulative impacts analysis must identify those requirements specified in the plan that apply to the project, and, if those requirements are not otherwise binding and enforceable, incorporate those requirements as mitigation measures applicable to the project.” (See CEQA Guidelines Section 15183.5[b][2].)

Section 12 of the GGERP outlines the steps that each DWR project will take to demonstrate consistency with the GGERP. These steps include:

- (1) Analyze GHG emissions from construction of the proposed project.
- (2) Determine that the construction emissions from the project do not exceed the levels of construction emissions analyzed in the GGERP.
- (3) Incorporate into the design of the project DWR’s project-level GHG emissions reduction strategies.
- (4) Determine that the project does not conflict with DWR’s ability to implement any of the “Specific Action” GHG emissions reduction measures identified in the GGERP.
- (5) Determination that the project would not add electricity demands to the State Water Project system that could alter DWR’s emissions reduction trajectory in such a way as to impede its ability to meet its emissions reduction goals.

Consistent with these requirements, a GGERP consistency determination checklist is presented in Appendix B documenting that the project has met each of the required elements.

Based on the analysis provided in the GGERP and the demonstration that the proposed project is consistent with the GGERP (as shown in the consistency determination checklist in Appendix B), DWR as the lead agency has determined that the proposed project’s incremental contribution to the cumulative impact of increasing atmospheric levels of GHGs would be less than cumulatively considerable, and therefore, less than significant. Because the proposed project would not result in emissions that would potentially adversely affect DWR’s ability to achieve its GHG emission reduction goals,

it would be considered consistent with the GGERP if it implements the applicable measures from Measure CO-1 of the GGERP. The BMPs applicable to the project to ensure consistency with the GGERP are identified below.

BMP 1. Evaluate project characteristics, including location, project work flow, site conditions, and equipment performance requirements, to determine whether specifications of the use of equipment with repowered engines, electric drive trains, or other high efficiency technologies are appropriate and feasible for the project or specific elements of the project.

BMP 3. Ensure that all feasible avenues have been explored for providing an electrical service drop to the construction site for temporary construction power. When generators must be used, use alternative fuels, such as propane or solar, to power generators to the maximum extent feasible.

BMP 6. Limit deliveries of materials and equipment to the site to off peak traffic congestion hours.

BMP 7. Minimize idling time by requiring that equipment be shut down after five minutes when not in use (as required by the State airborne toxics control measure [Title 13, Section 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site and provide a plan for the enforcement of this requirement.

BMP 8. Maintain all construction equipment in proper working condition and perform all preventative maintenance. Required maintenance includes compliance with all manufacturer's recommendations, proper upkeep and replacement of filters and mufflers, and maintenance of all engine and emissions systems in proper operating condition. Maintenance schedules shall be detailed in an Air Quality Control Plan prior to commencement of construction.

BMP 9. Implement tire inflation program on jobsite to ensure that equipment tires are correctly inflated. Check tire inflation when equipment arrives on-site and every two weeks for equipment that remains on-site. Check vehicles used for hauling materials off-site weekly for correct tire inflation. Procedures for the tire inflation program shall be documented in an Air Quality Management Plan prior to commencement of construction.

BMP 14. Develop a project specific construction debris recycling and diversion program to achieve a documented 50 percent diversion of construction waste.

BMP 15. Evaluate the feasibility of restricting all material hauling on public roadways to off-peak traffic congestion hours. During construction scheduling and execution minimize, to the extent possible, uses of public roadways that would increase traffic congestion.

With implementation of these BMPs, the impact of the proposed project with respect to conflicts with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs would be **less than significant**.

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Hazards and Hazardous Materials

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
HAZARDS AND HAZARDOUS MATERIALS —				
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

The project area is in unincorporated Sutter County. The Environmental Health Division of the Sutter County Community Services Department enforces hazardous waste regulations and serves as the county's Certified Unified Program Agency. No schools or airports are located within 1 mile of the pumping plants.

Hazardous Materials

Materials and waste may be considered hazardous if they are poisonous (toxicity), can be ignited by open flame (ignitability), corrode other materials (corrosivity), or react violently, explode, or generate vapors when mixed with water (reactivity). The term "hazardous material" is defined in Section 25501(n) of the California Health and Safety Code 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." 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.

To evaluate the potential presence of hazardous materials in soil and groundwater, a regulatory database search of sites within 1 mile of the project area was conducted to identify the documented use, storage, generation, and/or release of hazardous materials and/or petroleum products. In addition, active contaminated sites that are currently undergoing monitoring and remediation were identified. A search of the EnviroStor and GeoTracker databases, maintained by the California Department of Toxic Substances Control (DTSC) and the State Water Resources Control Board (State Water Board), respectively, revealed no known active/open hazardous materials sites within the footprint of any of the project components (DTSC, 2019a; State Water Board, 2019).

DTSC is also responsible for updating the Hazardous Waste and Substances Site List (Cortese List). The list is a planning document used by agencies and developers to comply with CEQA requirements, and includes data resources that provide information regarding the facilities or sites identified as meeting the Cortese List requirements. None of the pumping plant sites are included on the Cortese List (DTSC, 2019b). 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, nonoperating hazardous waste sites, voluntary cleanup sites, and school cleanup sites. The GeoTracker list shows underground storage tanks (State Water Board, 2019). Based on a review of the Cortese List conducted in July 2019, no listed sites are located within 1 mile of the project area (DTSC, 2019b).

Fire Suppression

The pumping plants are located in a Local Responsibility Area, where Sutter County is responsible for fire suppression. All three pumping plant sites are zoned by the California Department of Forestry and Fire Protection (CAL FIRE) as Unzoned Fire Hazard Severity Zones (CAL FIRE, 2007).

Discussion

- a, b) Project construction activities would likely require the use of limited quantities of hazardous materials such as fuels, oils, lubricants, paint, and solvents. The improper use, storage, handling, transport, or disposal of hazardous materials during construction or an accidental release could expose construction workers, the public, and the environment, including soil and/or groundwater or surface water, to adverse effects. Generally, the proposed project would not be expected to pose a risk of accidental release of hazardous materials or wastes, as these materials would not be used or stored on-site in significant quantities.

The California Occupational Safety and Health Administration is responsible for developing and enforcing workplace safety standards, including standards for handling and using hazardous materials during operations. The U.S. Department of Transportation and California Department of Transportation regulate transportation of hazardous materials. Any contractor that would handle hazardous materials during construction must prepare and implement a hazardous materials management plan for review and approval by the local Certified Unified Program Agency, in this case Sutter County's

Environmental Health Division. The hazardous materials management plan must identify the hazardous materials to be used, training provided to workers on the proper handling of the materials, and procedures for responding to any spills. Compliance with relevant regulations would limit exposure to hazardous building materials. These regulations include the Resource Conservation and Recovery Act; the Interim Final Rule in Title 29, Part 1926.62 of the Code of Federal Regulations (lead and lead-based paint); and the requirements of the Feather River Air Quality Management District's Rules and Regulations Statement for new developments, which requires compliance with the Asbestos National Emission Standard for Hazardous Air Pollutants.

Together, federal, State, and local regulations regulate the storage, handling, transportation, and disposal of hazardous materials, including hazardous building materials, to minimize the risk of accidental release and exposure. Therefore, the transport, use, storage, handling, and disposal of hazardous materials for the proposed project would be adequately controlled through compliance with existing regulatory requirements during construction and operation. This impact would be **less than significant**.

- c) Construction of the proposed project would not occur within 0.25 mile of a school. Therefore, **no impact** would occur with regard to hazardous emissions near schools.
- d) The pumping plant sites and proposed staging areas are not included in GeoTracker, EnviroStor, or the Cortese List, the environmental databases maintained by the State Water Board (2019) and DTSC (2019a, 2019b). Therefore, the proposed project would not cause a significant hazard to the public or the environment related to being located on a known hazardous materials site. **No impact** would occur.
- e) The pumping plant sites and proposed staging areas are not located within an airport land use plan or within 2 miles of an airport or in the vicinity of an active private airstrip. Therefore, **no impact** would occur with regard to air traffic hazards or excessive noise.
- f) The Sutter County Emergency Operations Plan does not include any specific evacuation routes; these would be identified and coordinated by local law enforcement and emergency service responders as needed during an emergency situation. State Routes 20 and 99 are the closest major highways to the project area; the project area is located off of gravel levee crown roads and not near either major highway. Therefore, the likelihood that project construction and operations activities would impair or physically interfere with emergency response teams or an evacuation plan is low. This impact would be **less than significant**.
- g) According to CAL FIRE's Fire Hazard Severity Zone map, the pumping plant sites and proposed staging areas are not in areas designated as very high or high fire hazard zones (CAL FIRE, 2007). The proposed project would not include any habitable structures. Therefore, this impact associated with potential exposure to wildland fires would be **less than significant**.

References

- CAL FIRE (California Department of Forestry and Fire Protection). 2007. Draft Fire Hazard Severity Zones in LRA—Sutter County. Scale 1:100,000. October 3, 2007.
- DTSC (California Department of Toxic Substances Control). 2019a. EnviroStor database search results. Available: <https://envirostor.dtsc.ca.gov/public/>. Accessed July 25, 2019.
- . 2019b. EnviroStor Hazardous Waste and Substances Site List (Cortese). Available: https://www.envirostor.dtsc.ca.gov/public/map/?global_id=38330005. Accessed July 25, 2019.
- State Water Board (State Water Resources Control Board). 2019. GeoTracker database search results. Available: <https://geotracker.waterboards.ca.gov>. Accessed July 25, 2019.
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Hydrology and Water Quality

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
HYDROLOGY AND WATER QUALITY —				
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

Surface Water Hydrology

The project area is located in Sutter County within the relatively flat Sacramento Valley, along the East Levee of the Sutter Bypass. Sutter County has a climate similar to Mediterranean climates, with hot, dry summers and relatively moderate, wet winters. Precipitation rates are greatest from late fall to early spring, followed by the dry season from late spring to early fall. Because Sutter County has no large water storage reservoirs, rainfall percolates into the soil, runs off into local streams and rivers, and evaporates. By late summer, most small creeks and streams are generally dry and the rivers are at their lowest levels. Some small creeks have water during the dry season because of agricultural irrigation and drainage (Sutter County, 2008).

Sutter County lies within the Sacramento River watershed, which also includes the Feather and Bear Rivers. The Sacramento River is California's largest river (in terms of volume of water and length), draining a watershed of approximately 27,210 square miles, including Sutter County. The Sacramento River forms a major portion of Sutter County's western boundary, flowing from Colusa County south to the Sutter/Sacramento County boundary. The river supports various

beneficial uses, including recreational, agricultural, and wildlife. Sutter County does not use the river for municipal or domestic water supplies (Sutter County, 2008).

The Feather River forms a major portion of Sutter County's eastern boundary. Like the Sacramento River, the Feather River provides beneficial uses, including recreational, agricultural, and wildlife. The City of Yuba City obtains a large portion of its annual water supplies for municipal and domestic use from the river.

Water Quality

Water quality in the Sacramento River is generally good. The river's water is treated and used for municipal and industrial water supplies upstream and downstream of Sutter County. The State Water Resources Control Board (State Water Board) publishes updates to the *Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins* (Basin Plan) 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 include agriculture, forestry, urban land uses, and stormwater runoff. Further, the Sacramento River in the area of the proposed project (Red Bluff to Knights Landing) is listed in the State Water Board's total maximum daily load (TMDL) program for dichlorodiphenyltrichloroethane (DDT), dieldrin, mercury, polychlorinated biphenyls (PCBs), and unknown toxicity (State Water Board, 2017). The State Water Board's TMDL programs are implemented pursuant to Clean Water Act Section 303(d) for impaired water bodies. TMDL programs are plans that describe how an impaired water body will meet federal water quality standards.

Water quality in the Feather River is generally good, but the river is listed in the State Water Board's TMDL program for chlorpyrifos (an agricultural insecticide), Group A pesticides, mercury, PCBs, and unknown toxicity. The Sutter Bypass is listed in the State Water Board's TMDL program for mercury (State Water Board, 2017).

Groundwater Hydrology and Water Quality

The project area is located within the greater Sacramento Valley Groundwater Basin, Sutter Subbasin. The major surface water sources described above are major sources of groundwater recharge to the groundwater subbasin. Other sources of groundwater recharge in Sutter County are percolation of rainfall, agricultural irrigation, and subsurface inflow from adjacent groundwater basins. Groundwater pumping and subsurface outflow to rivers and adjoining subbasins result in a groundwater discharge from Sutter County.

In Sutter County, groundwater is used for agricultural irrigation and domestic drinking water. Groundwater levels are reported to be stable in Sutter County, tending to be within about 10 feet below the ground surface (Sutter County, 2008). Groundwater near each of the pumping plants is also approximately 10 feet below the ground surface (DWR, 2019a). DWR reported that the Sutter Subbasin has an estimated 5 million acre-feet of usable storage potential for Sutter County (Sutter County, 2008).

Water quality in Sutter County is monitored by DWR, the California Department of Public Health, and Sutter County. The primary groundwater chemistry in Sutter County is calcium,

magnesium, sodium, chloride, sulfate, and bicarbonate. Recent groundwater data in portions of the county report chemical elements and compounds in amounts that exceed drinking water quality standards for safety and aesthetics. In addition, groundwater quality is expected to degrade in the future unless measures are taken to reduce contaminants in soil and prevent additional contamination. No major areas of groundwater contamination have been reported in Sutter County (Sutter County, 2008).

Flood Control and Flood Management Facilities

The proposed project involves three pumping plants along the Sutter Bypass. The bypass is a major human-made flood control area that acts as an overflow collector of flood flows from the Sacramento River after they pass through Butte Slough and the Butte Sink. The Sutter Bypass starts north of Pass Road, westerly of the Sutter Buttes, and flows generally in a south-southeast orientation for about 27 miles to the Feather River, about 3 miles downriver from the rural community of Nicolaus (Sutter County, 2008).

In addition, the project area is adjacent to Tisdale Weir, one of the major overflow weirs for the Sacramento River Flood Control Project. Tisdale is generally the first project weir to overflow and the last to stop flowing. The weir is a fixed-elevation, ungated overflow structure that was originally designed to spill and convey up to 38,000 cubic feet per second of excess Sacramento River floodwaters into the Tisdale Bypass, a 4-mile-long channel that flows eastward to the Sutter Bypass.

Discussion

- a) During construction, project construction equipment and materials would include fuels, oils and lubricants, cement and concrete, all of which are 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. Construction activities would be required to comply with numerous hazardous materials regulations. These regulations are designed to ensure that hazardous materials are transported, used, stored, and disposed of safely to protect worker safety, and to reduce the potential for a release of construction-related fuels or other hazardous materials into the environment, including stormwater and downstream receiving water bodies such as the Sacramento River.

Construction of the proposed project would include earth-disturbing activities that could result in the release of sediments and other pollutants and degrade receiving water quality in the Sacramento River at levels exceeding applicable water quality standards.

As noted in Chapter 2, *Project Description*, total ground disturbance would be less than one acre for each pumping plant site. Because the proposed project would disturb less than one acre, it would not be subject to conditions of an NPDES Construction General Permit. However, several mitigation measures included in the *Biological Resources* section of this IS/MND would be implemented to protect water quality:

- Mitigation Measure BIO-25 requires that diesel fuel and oil be used, stored, and disposed of in accordance with standard protocols for handling hazardous materials. In addition, all personnel involved in the use of hazardous materials must be trained in emergency response and spill control.
- Mitigation Measure BIO-26 requires implementation of soil and/or water contamination prevention measures such as removal of hazardous materials from areas where they could enter waters of the State, containment of any releases or spills of hazardous materials, and notification of the appropriate agencies within the regulatory time frames.
- Mitigation Measure BIO-27 requires the use of a turbidity curtain if turbidity is expected to increase beyond baseline conditions.
- Mitigation Measure BIO-28 requires that excavated material be placed in upland areas where it will not likely be subject to regular flooding or mobilization of soluble metals or to affect groundwater, and will be stockpiled in disturbed areas.

BMPs that would be implemented to protect water quality are identified in Chapter 2.

Lastly, 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.

During operations after project construction has been completed, routine maintenance would also include limited use of equipment that would use fuels, oils, and/or lubricants. BMPs could be required as part of the Section 401 water quality standards certification. The required compliance with the numerous laws and regulations discussed above that govern transportation, use, handling, and disposal of hazardous materials would limit the potential for creation of hazardous conditions due to the use or accidental release of hazardous materials. Therefore, this impact would be **less than significant**.

- b) The proposed project would not create any new impervious surfaces, and as a result, would not interfere with groundwater recharge. The project also would not include groundwater extraction. Construction of the proposed project would include dewatering of the concrete-lined inlet basins at Pumping Plant Nos. 1 and 3 and the gravity drains at Pumping Plant No. 3, but the proposed project would not negatively affect groundwater supplies. Therefore, this impact would be **less than significant**.
- c.i) As discussed previously in response to checklist question a), the proposed project would implement Mitigation Measures BIO-27 and BIO-28 along with the BMPs identified in Chapter 2. Implementing these procedures and BMPs would prevent erosion and siltation during construction. As a result, this impact would be **less than significant**.
- c.ii) The proposed project would have a relatively small footprint that would be spread out over three different pumping plant sites, would not create any new impervious surfaces

- that could result in increases in stormwater runoff, and would not produce substantial runoff volumes that could cause flooding on- or off-site. Therefore, the potential for flooding on- or off-site would be minor. This impact would be **less than significant**.
- c.iii) As discussed previously in response to checklist question a), the proposed project would implement Mitigation Measures BIO-25, BIO-26, BIO-27, and BIO-28, and the BMPs listed in Chapter 2. These procedures and BMPs would minimize the potential for the project to create additional sources of polluted runoff. In addition, the proposed project would not create any new impervious surfaces that could result in increases in stormwater runoff, and would not produce substantial runoff volumes that would exceed the capacity of the existing drainage system. Therefore, this impact would be **less than significant**.
- c.iv) The project area is within a Federal Emergency Management Agency 100-year flood zone, as well as within a U.S. Army Corps of Engineers (USACE) 200-year flood zone (DWR, 2019b). However, the proposed project would demolish the existing control buildings and rehabilitate the gravity drain system. It would not be anticipated to impede or redirect any flood flows. Therefore, this impact would be **less than significant**.
- d) As mentioned above, the project area is within a Federal Emergency Management Agency 100-year flood zone and a USACE 200-year flood zone (DWR, 2019b). However, project work would occur during the dry season and would not risk the release of pollutants from project inundation.

Seiches are large waves on an enclosed or semi-enclosed body of water that can be caused by seismic activity. The project area is not near a body of water at risk of forming a seiche. In addition, strong seismic ground shaking is required to form seiche waves and the project area is not located in an area prone to strong seismic ground shaking. Therefore, there is no risk of seiches adversely affecting the project. Tsunamis occur on the ocean and the project area is not located near the ocean. Therefore, **no impact** would occur related to the risk of release of pollutants by project inundation caused by a flood, seiche, or tsunami.

- e) As mentioned in the *Environmental Setting* discussion above, the project area is within the Sacramento Valley Groundwater Basin, Sutter Subbasin. The pumping plant sites are under the jurisdiction of the Sutter Extension Water District groundwater sustainability agency. The purpose of the proposed project is to rehabilitate existing pumping plants used to convey drainage into the Sutter Bypass, which would not alter the groundwater recharge for the basin. In addition, as noted above, construction of the proposed project would include dewatering of the concrete-lined inlet basins at Pumping Plant Nos. 1 and 3 and the gravity drains at Pumping Plant No. 3, but the proposed project would not increase groundwater extraction relative to existing conditions. Therefore, impacts related to a conflict with or obstruction of a water quality control plan or sustainable groundwater management plan would be **less than significant**.

References

- DWR (California Department of Water Resources). 2019a. Groundwater Information Center Interactive Map Application. Available: <https://gis.water.ca.gov/app/gicima/>. Accessed January 9, 2019.
- . 2019b. Best Available Maps (BAM) database. Available: gis.bam.water.ca.gov/bam/. Accessed July 23, 2019.
- State Water Board (State Water Resources Control Board). 2017. 2014 and 2016 California Integrated Report: Clean Water Act Sections 303(d) and 305(b). Final Staff Report. October 3, 2017. Available: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml. Accessed December 26, 2018.
- Sutter County. 2008. Sutter County General Plan Update Technical Background Report. Prepared by PBS&J in partnership with West Yost & Associates, DKS Associates, MuniFinancial, and Applied Development Economics. February 2008.
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Land Use and Planning

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
LAND USE AND PLANNING — Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The Sutter Bypass lies within a rural area that supports agricultural uses, primarily rice production. The project area is designated by the *Sutter County 2030 General Plan* as Agriculture (80-Acre Minimum) (AG-80) and Open Space (OS) (Sutter County, 2014). Land uses surrounding the pumping plant sites are designated predominantly as AG-80 and OS as well.

The Agriculture (AG) designation provides for the long-term production, processing, distribution, and sale of food and fiber on prime agricultural soils and other productive and potentially productive lands. This designation applies to locations that experience minimal intrusion from or conflicts with nonagricultural uses, or where such conflicts can be mitigated. Typical permitted uses include crop production, orchards, grazing, pasture and rangeland, and associated residences and agricultural support uses.

The OS designation identifies and permanently protects important open space lands in Sutter County because of their value as habitat or their topography or scenic quality, for public safety, or for a comparable purpose. Typical Open Space lands include nonagricultural areas that contain important vegetation, wildlife, and/or habitat resources; and areas that present conditions hazardous to rural and urban development. Typical permitted uses include resource preservation, agriculture, passive public recreation, buffers, and greenbelts (Sutter County, 2014). The vicinity of the project area is predominantly rural; the nearest residential communities, Yuba City and Marysville, are approximately 7–10 miles northeast of the northernmost pumping plant (Pumping Plant No. 3).

Discussion

- a) The project area is in a rural area of Sutter County. The proposed project would demolish the existing control buildings and rehabilitate the gravity drain system. The project would not include the construction of any new buildings or other features that would create a new physical barrier between any existing communities or restrict access to any community. Therefore, the proposed project would not physically divide an established community. **No impact** would occur.
- b) The proposed project would demolish the existing control buildings and rehabilitate the gravity drain system. Construction activities would be temporary and maintenance activities after construction would be similar to those that currently occur. As discussed

previously under *Agriculture and Forestry Resources*, proposed project activities would be limited to the footprints of the respective pumping plants, and previously disturbed areas along the landside of the East Levee of the Sutter Bypass would be used for the materials staging areas.

The purpose of the AG land use designation, which includes the AG-80 designation, is to protect and promote the long-term viability and productivity of Sutter County's agricultural resources, uses, and economy. Agricultural support services and industries compatible with adjacent uses and operation are encouraged in the AG district.

Accordingly, the proposed project is consistent with the land use designation because the demolition of the existing control plants and rehabilitation of the gravity drain system would be a critical component of the Sacramento River flood control system, which is essential for agricultural operations in the area. The OS designation identifies and permanently protects important open space lands in Sutter County because of their value as habitat or their topography or scenic quality, for public safety, or for a comparable purpose. As described in other sections of this IS/MND (*Aesthetics, Biological Resources, and Public Services*), the proposed project would not interfere with the value of the Open Space lands in the project vicinity.

The proposed project would not conflict with any policies or regulations or the applicable land use designations for the project area. Therefore, **no impact** would occur related to a conflict with applicable land use plans, policies, and regulations.

References

- Sutter County. 2014. Sutter County General Plan, Countywide Land Use Diagram. Revised August 7, 2014. Available: <https://www.suttercounty.org/assets/pdf/cs/ps/gp/documents/00-All%20County%20Land%20Use%20Diagrams.pdf>. Accessed December 7, 2018.
- . 2018. Sutter County Zoning Code. June 2018. Available: https://www.suttercounty.org/assets/pdf/cs/ps/zoning_code.pdf. Accessed June 27, 2019.

Mineral Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
MINERAL RESOURCES — Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The unincorporated portions of Sutter County have rich deposits in mineral resources. The Sutter County Surface Mining Code and Sutter County Zoning Code both permit the extraction of mineral resources from land under County jurisdiction. Historic mining extraction has included kaolin and common clay, sand, soils, rock, pumice, and some gold. Construction aggregate is currently the main market for mining resources produced in Sutter County and consists predominantly of sand, gravel, soil for construction projects, and crushed stone (Sutter County, 2010). No classification studies evaluating mineral resources or mineral resource mines have been conducted in or near the project area (CGS, 2018a, 2018b).

Discussion

- a, b) No Mineral Lands Classification map has been published for the area along the Sutter Bypass. Although the *Sutter County 2030 General Plan* acknowledges the presence of some mineral resources in the area, none have been reported in the project area. Therefore, implementation of the proposed project would not alter, destroy, or limit access to any existing significant mineral resources. **No impact** would occur.

References

- CGS (California Geological Survey). 2018a. CGS Information Warehouse: Mineral Land Classification. Available: <https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=mlc>. Accessed December 14, 2018.
- . 2018b. Mines Online. Available: <https://maps.conservation.ca.gov/mol/index.html>. Accessed December 14, 2018.
- Sutter County. 2010. Sutter County General Plan Draft Environmental Impact Report. State Clearinghouse No. 2010032074. Section 6.8, *Geology, Seismicity, and Mineral Resources*.

Noise

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
NOISE — Would the project result in:				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Noise can be generally defined as unwanted sound. Sound traveling in the form of waves from a source exerts pressure that 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.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). Therefore, the sound pressure level constitutes the additive force exerted by a sound corresponding to the frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, to assess potential noise impacts, sound is measured using an electronic filter that deemphasizes frequencies below 1,000 Hz and above 5,000 Hz, in a manner that corresponds to the human ear's decreased sensitivity to low and extremely high frequencies relative to mid-range frequencies. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). Frequency A-weighting follows an international standard methodology for deemphasizing certain frequencies and is typically applied to community noise measurements.

Effects of Noise on People

When a new noise is introduced to an environment, humans' reactions can be predicted by comparing the new noise to the existing "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 to be by those hearing it. With regard to increases in A-weighted noise levels, the following relationships occur (Caltrans, 2013):

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived.
- Outside of the laboratory, a 3 dB change is considered a just-perceivable difference.

- A change of at least 5 dB is required before any noticeable change in human response is expected.
- A change of 10 dB is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. The decibel scale was developed because the human ear perceives sound in a nonlinear fashion. Because the decibel scale is based on logarithms, 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

Noise generated by stationary point sources attenuates (lessens) at a rate between 6 dBA for hard sites and 7.5 dBA for soft sites for each doubling of distance from the reference measurement. (Stationary point sources include stationary mobile sources such as idling vehicles and construction equipment.) Hard sites are those with a reflective surface between the source and the receiver, such as a parking lot or smooth body of water. No excess ground attenuation is assumed for hard sites; the change in the noise level with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. In addition to geometric spreading, an excess ground attenuation value of 1.5 dBA (per doubling of distance) is normally assumed for soft sites.

Noise generated by line sources (such as traffic noise from vehicles) attenuates at a rate between 3 dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement (Caltrans, 2013).

Fundamentals of Vibration

Groundborne vibration can be a serious concern for neighboring structures and receptors. Some common sources of groundborne vibration are trains, buses on rough roads, and construction activities such as blasting, sheet pile driving, and operation of heavy earthmoving equipment. The effects of groundborne vibration include movement of building floors, rattling of windows, shaking of items placed on shelves or hanging on walls, and rumbling sounds. In extreme cases, vibration can damage buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and sheet pile driving during construction. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by only a small margin. A vibration level that causes annoyance will be well below the damage threshold for normal buildings.

In contrast to airborne noise, groundborne vibration is not a common environmental problem. Typically, groundborne vibration generated by human-made activities attenuates rapidly with distance from the source of the vibration.

Applicable Noise and Vibration Regulations

The Sutter County Code of Ordinances does not address construction-related noise. However, Policy N 1.6, *Construction Noise*, of the *Sutter County 2030 General Plan* requires discretionary projects to limit noise-generating construction activities within 1,000 feet of noise-sensitive uses (i.e., residential uses, day care centers, schools, convalescent homes, and medical care facilities) to the daytime hours between 7 a.m. and 6 p.m. on weekdays and 8 a.m. and 5 p.m. on Saturdays, and prohibits construction on Sundays and holidays unless permission has been applied for and granted by the County (Sutter County, 2011).

The Noise Element of the *Sutter County 2030 General Plan* requires construction projects to ensure acceptable interior vibration levels at nearby noise-sensitive uses based on the Federal Transit Administration's groundborne vibration impact criteria. Those criteria are listed in **Table 3-8**.

TABLE 3-8
GROUNDBORNE VIBRATION IMPACT CRITERIA FOR GENERAL ASSESSMENT

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

NOTES:

VdB = vibration decibels

^a "Frequent events" is defined as more than 70 vibration events of the same source per day.

^b "Occasional events" is defined as between 30 and 70 vibration events of the same source per day.

^c "Infrequent events" is defined as fewer than 30 vibration events of the same kind per day.

^d This criterion is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes.

SOURCE: Sutter County, 2011.

Sensitive Receptors

Some land uses are considered more sensitive to ambient noise levels than others because of the amount of noise exposure (in terms of both duration of exposure and insulation from noise) and the types of activities typically involved. Residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, and parks and other outdoor recreation areas generally are more sensitive to noise than are commercial (other than lodging facilities) and industrial land uses.

The project area is surrounded by agricultural and open space uses. There are no residences or other sensitive receptors in the vicinity of the three pumping plant sites. The nearest residential communities in Yuba City and Marysville are approximately 7–10 miles northeast of the northernmost pumping plant (Pumping Plant No. 3). Sensitive receptors for vibration include structures (especially older masonry structures), people (especially residents, students, and the elderly and sick), and vibration-sensitive equipment. None of these receptors are located near the three pumping plant sites.

Discussion

- a) The proposed project would involve retrofitting maintenance structures at three separate pumping plants along the East Levee of the Sutter Bypass in Sutter County. These activities would require the use of construction equipment that would generate noise. Construction noise levels at and near the project area would fluctuate depending on the particular type, number, and duration of use of various pieces of construction equipment used. Construction-related worker trips and truck trips to and from the sites would increase ambient noise levels along haul routes, depending on the number of haul trips made and types of vehicles used.

Project construction activities are expected to require the use of pickups, dump trucks, excavators, trash pumps, a front-end loader, a concrete delivery truck, and a crane with a sheet pile driver attachment. Project construction would occur in two phases at each of the three sites. Phase I work is anticipated to begin in June 2021, with construction lasting 1 month at each pumping plant. Phase I construction at all three pumping plants is expected to be complete by October 2021. Phase II work at the three sites is expected to occur between June 2022 and October 2022. Sheet pile driving would occur for approximately 5 days at each pumping plant.

Table 3-9 shows typical noise levels produced by various types of construction equipment, including equipment that would be required for project construction.

TABLE 3-9
TYPICAL NOISE LEVELS FROM OPERATION OF CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Exposure Level, dBA at 50 Feet
Backhoe	80
Concrete Mixer (truck)	85
Concrete Pump (truck)	82
Concrete Vibrator	76
Crane (derrick)	88
Crane (mobile)	83
Dozer	85
Excavator	85
Grader	85
Loader	85
Pickup Truck	75
Pile Driver (vibratory)	101
Pump	76
Roller	74
Scraper	89
NOTE: dBA = A-weighted decibels	
SOURCE: FHWA, 2017	

Project construction would temporarily generate noise in the project area and vicinity. The noisiest activity would be the installation of temporary sheet piles near the mouth of the intake basins to allow dewatering of the basins before the start of work. Sheet piles are commonly installed using vibratory pile drivers, although other methods are also available. Vibratory pile drivers can generate 101 dBA at 50 feet and would be the noisiest project construction equipment.

However, because all three pumping plant sites are located in open space and agricultural areas with no residential or other sensitive uses in the vicinity, this noise would not affect any sensitive receptors. As discussed previously, the nearest sensitive receptors are located in Yuba City and Marysville, approximately 7–10 miles from the location of Pumping Plant No. 3.

Noise is a localized impact and attenuates with distance. Even in areas without intervening structures or topography, noise impacts are not felt beyond 0.5 mile from the source. In addition, neither the Sutter County Code nor the *Sutter County 2030 General Plan* establishes quantitative noise exposure standards that apply to construction activity. General Plan Policy N 1.6, *Construction Noise*, establishes limits on construction work hours and restricts construction activity to the daytime hours between 7 a.m. and 6 p.m. on weekdays and 8 a.m. and 5 p.m. on Saturdays (Sutter County, 2011). As stated in Chapter 2, *Project Description*, project construction activities would be limited to Sutter County's allowed construction hours.

During project operation, maintenance-related trips to the three pumping plants would occur occasionally. Maintenance trips would include trips to replace the stop logs installed at the pumping plants as needed (approximately every 3–5 years), and to inspect and clear vegetation from the newly installed trash racks (weekly during the summer, when flows are reduced). Fewer maintenance trips to the pumping plant sites would occur than under existing conditions. Installation of the trash racks would allow maintenance staff to clear debris more thoroughly and efficiently using equipment, and would eliminate regular trips to monitor the pumping plants and remove debris by hand. A boom truck and excavator would remain on-site during heavy debris flows and would be used to clear debris from the trash racks. The project would not introduce any other operational sources of noise.

Therefore, the proposed project would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project area in excess of standards established in the local general plan, noise ordinance, or applicable standards of other agencies. This impact would be **less than significant**.

- b) Groundborne noise and vibration would be generated by construction equipment used at the pumping plant sites, but would attenuate rapidly with distance. Because of the distance between the pumping plants and the nearest sensitive receptors, any temporary vibration generated by construction equipment would not be perceptible by receptors.

Therefore, impacts associated with the generation of excessive groundborne vibration or groundborne noise levels would be **less than significant**.

- c) The pumping plants are not located within 2 miles of a private airstrip or public use airport. **No impact** would occur related to the exposure of people residing or working in the project area to excessive noise levels from airport activity.

References

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

FHWA (Federal Highway Administration). 2017. Construction Noise Handbook. Chapter 9, *Construction Equipment Noise Levels and Ranges*. Updated August 24, 2017.

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

Sutter County. 2011. Sutter County 2030 General Plan. Adopted by Sutter County Board of Supervisors on March 29, 2011, Resolution No. 11-029. Prepared in consultation with Atkins (formerly PBS&J), DKS Associates, West Yost Associates, and Willdan Financial Services. Yuba City, California. Noise Element.

Population and Housing

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
POPULATION AND HOUSING — Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

According to U.S. Census Bureau 2018 population estimates, Sutter County is home to approximately 96,807 people. There are two incorporated cities, Yuba City with a population of 66,992 and Live Oak with 8,771 residents (U.S. Census Bureau, 2019). The remaining residents live in the small communities of Tierra Buena, Meridian, Rio Oso, Trowbridge, Sutter, Pleasant Grove, Nicolaus, East Nicolaus, Riego, or Robbins, or reside in the vast rural, agricultural areas that make up Sutter County (Sutter County, 2019). There are no residential structures in or directly adjacent to the project area.

The U.S. Census Bureau and California Department of Finance provide population data, estimates, and projections for cities and counties throughout California. Sutter County's population grew at a rate of roughly 2.2 percent between 2010 and 2018, from 94,756 in April 2010 to 96,807 in July 2018 (U.S. Census Bureau, 2019). For nearly 40 years, most of the growth in Sutter County has taken place in the incorporated cities of Yuba City and Live Oak; as a result, fewer people reside in unincorporated areas of the county in 2019 than in 1970. As of January 2019, more than 78 percent of the county's population is living in the incorporated cities (DOF, 2019). The rate at which Sutter County's total population changes over the next 40 years will depend on employment conditions, growth pressures in adjacent regions, and the land use policies of the County and its cities.

According to the U.S. Census, there were 34,204 housing units in Sutter County in 2017 (U.S. Census Bureau, 2019), of which 76 percent (25,912 households) were within the incorporated county area (U.S. Census Bureau, 2019).

Discussion

- a) There are no residential structures in or directly adjacent to the project area. The proposed project would demolish the existing control buildings and rehabilitate the gravity drain system and would not involve the construction of any new homes or businesses, or the extension of existing roads or other infrastructure. The proposed project would employ approximately five workers over the duration of the 1-month construction period at each pumping plant site during each of the two construction phases. It is anticipated that these temporary employees would come from the existing labor pool in the region. Therefore, the proposed project would not induce unplanned

population growth in the project vicinity or greater region, either directly or indirectly. **No impact** would occur.

- b) The project area is on the East Levee of the Sutter Bypass, in a rural area where agriculture predominates. The majority of Sutter County residents live in the incorporated cities of Yuba City and Live Oak, and there is no housing on or adjacent to the project area. No people or houses would be displaced by the proposed project. **No impact** would occur.

References

- DOF (California Department of Finance). 2019. E-1 Population Estimates for Cities, Counties, and the State—January 1, 2018 and 2019. Sacramento, California. May 2019. Available: <http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-1/>. Accessed June 25, 2019.
- Sutter County. 2019. Sutter County Demographics. Available: https://www.suttercounty.org/doc/business/doingbusinessin/help_demographics#. Accessed June 27, 2019.
- U.S. Census Bureau. 2019. QuickFacts. Search for Live Oak city, California; Sutter County, California; Yuba City city, California. Available: <https://www.census.gov/quickfacts/fact/table/liveoakcitycalifornia,suttercountycalifornia,yubacitycitycalifornia/HSG010218>. Accessed June 27, 2019.
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Public Services

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
PUBLIC SERVICES —				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:				
i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Fire protection for the project area and locations east of the Sutter Bypass is provided by the Sutter County Fire Department's County Service Area F (Sutter County, 2017). The Sutter County Fire Department protects approximately 250 square miles of Sutter County, including the Sutter Buttes. The closest fire stations in County Service Area F to the project area are Station #6, 2340 California Street in Sutter, approximately 8 miles north of the northernmost pumping plant (Pumping Plant No. 3), and Oswald-Tudor Station #8, 128 Barry Road in Yuba City, approximately 8.5 miles to the east (Sutter County, 2019a).

West of the Sutter Bypass, fire protection is provided by the Meridian Basin Fire Protection District north of the Tisdale Bypass and by the Sutter Basin Fire Protection District south of the Tisdale Bypass (Sutter County, 2017). The closest stations operated by these fire districts are Meridian Station #65, located approximately 14 miles northwest of the northernmost pumping plant (Pumping Plant No. 3), and Robbins Station, roughly 7 miles south-southwest from the southernmost pumping plant (Pumping Plant No. 1). The Sutter County Fire Department has automatic and mutual aid agreements in place with these fire protection agencies and the Yuba City Fire Department.

The Sutter County Sheriff's Department provides police protection services in unincorporated Sutter County and the city of Live Oak. In addition, the California Highway Patrol provides traffic enforcement on all highways in the county and all roadways in the unincorporated county area.

The Sutter County Sheriff's Department operates two stations: a dispatch center located at 1077 Civic Center Boulevard in Yuba City; and a substation located at 2755 Fir Street in the city of Live Oak. The dispatch center houses the Sheriff's Department headquarters and dispatch office and serves as the hub of all dispatch activity for both law enforcement and fire protection services

in Sutter County (Sutter County Sheriff, 2019). The California Highway Patrol has one office in Yuba City, located at 1619 Poole Avenue, which serves Sutter and Yuba Counties (California Highway Patrol, 2019).

There are 15 school districts in Sutter County (Sutter County Superintendent of Schools, 2019). The project area and vicinity lie within the attendance zone for Sutter High School, part of the Sutter Union High School District (HomeTownLocator, 2019). The closest school is about 8 miles north of the northernmost pumping plant (Pumping Plant No. 3). No other schools are located near the project area.

As described under *Recreation* below, the pumping plants are within the Sutter Bypass Wildlife Area, managed by the California Department of Fish and Wildlife; the Sutter Buttes are approximately 5 miles to the north; and the Sutter National Wildlife Refuge, managed by the U.S. Fish and Wildlife Service, is located along the Sutter Bypass between Pumping Plant Nos. 2 and 3. However, outside of river recreation and State wildlife areas, active parkland is located primarily in, and operated and maintained by, the Cities of Yuba City and Live Oak; no developed parks exist in the project vicinity. The closest park is Happy Park in southwestern Yuba City, which is roughly 7.5 miles from the northernmost pumping plant (Pumping Plant No. 3). Similarly, the closest other public facilities, such as libraries, are located several miles to the northeast in Yuba City.

Discussion

- a.i–v) The proposed project would employ approximately five workers for a total of 6 months (1 month at each of the three pumping plant sites during each of the two project phases). It is anticipated that these temporary employees would come from the existing labor pool in Sutter County and would not result in an increase in population over existing conditions. As a result, there would be no need to construct any new government facilities. Therefore, there would be no change in the demand for police and fire protection, or for community amenities such as schools, parks, or libraries. **No impact** would occur.

References

- California Highway Patrol, 2019. Yuba-Sutter. Available: [https://www.chp.ca.gov/Find-an-Office/Valley-Division/Offices/\(285\)-Yuba-Sutter](https://www.chp.ca.gov/Find-an-Office/Valley-Division/Offices/(285)-Yuba-Sutter). Accessed August 6, 2019.
- HomeTownLocator (CA HomeTownLocator®). 2019. School Boundaries Map & School Profile: Sutter High Sutter, CA 95982. Available: [https://california.hometownlocator.com/schools/profiles,n,sutter high,z,95982,t,pb,i,1007016.cfm](https://california.hometownlocator.com/schools/profiles,n,sutter%20high,z,95982,t,pb,i,1007016.cfm). Accessed June 27, 2019.
- Sutter County. 2008. Sutter County General Plan Update Technical Background Report. Prepared by PBS&J in partnership with West Yost & Associates, DKS Associates, MuniFinancial, and Applied Development Economics. February 2008. Chapter 3.0, *Infrastructure and Community Services*.

- . 2017. Map of Sutter County County Service Areas (CSA) & Fire Protection Districts. Available: https://www.suttercounty.org/assets/pdf/cs/fs/Fire_Districts.pdf. Accessed June 25, 2019.
- . 2019a. Fire Stations. Available: https://www.suttercounty.org/doc/government/depts/ds/fs/fire_stations. Accessed June 25, 2019.
- . 2019b. Fire Services: Operations. Available: https://www.suttercounty.org/doc/government/depts/ds/fs/fire_operations. Accessed June 25, 2019.
- Sutter County Sheriff. 2019. Operations Division. Available: <https://www.suttersheriff.org/div/OperationsDiv.aspx>. Accessed June 27, 2019.
- Sutter County Superintendent of Schools. 2019. School Districts. Available: <http://www.sutter.k12.ca.us/School-Districts/index.html>. Accessed June 27, 2019.
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Recreation

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
RECREATION —				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Recreational opportunities in the project vicinity include hiking, boating, birdwatching, hunting, and fishing. The Sutter National Wildlife Refuge, managed by the U.S. Fish and Wildlife Service, is located along the Sutter Bypass between Pumping Plant Nos. 2 and 3. The refuge provides visitor opportunities for hiking, wildlife observation, and photography seasonally from February 15 through June 30, and for hunting during waterfowl and upland game bird hunting season (USFWS, 2018, 2019).

The pumping plants are within the Sutter Bypass Wildlife Area, located along the bypass both north and south of the Sutter National Wildlife Refuge. The Sutter Bypass Wildlife Area is managed by the California Department of Fish and Wildlife and is used for nature photography, birdwatching, fishing, and hunting (CDFW, 2016).

Outside of river recreation and State wildlife areas, active parkland in Sutter County is located primarily in, and operated and maintained by, the Cities of Yuba City and Live Oak; there are no developed parks in the project vicinity. The closest park is Happy Park in southwestern Yuba City, which is roughly 7.5 miles from the northernmost pumping plant (Pumping Plant No. 3).

Discussion

- a–b) The proposed project would employ approximately five workers for a total of 6 months (1 month at each of the three pumping plant sites during each of the two project phases). It is anticipated that these temporary employees would come from the existing labor pool in Sutter County and would not result in an increase in population over existing conditions that would increase demand for recreation facilities. The pumping plants lie within the State-managed Sutter Bypass Wildlife Area and close to the Sutter National Wildlife Refuge, but the proposed project would not add amenities to these recreation areas or otherwise cause an increase in their use. The nearest developed parkland to the project area is 7.5 miles or farther from each pumping plant site, and project activities would be limited to the existing pumping plants and immediately adjacent disturbed areas. The proposed project would not include recreational facilities, nor would it require the construction or expansion of recreational facilities. Therefore, **no impact** related to recreation would result from the proposed project.

References

- CDFW (California Department of Fish and Wildlife). 2016. Sutter Bypass Wildlife Area map. Available: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=87895&inline>. Last updated August 2016. Accessed November 28, 2018.
- USFWS (U.S. Fish and Wildlife Service). 2018. About Sutter National Wildlife Refuge. Available: <https://www.fws.gov/refuge/Sutter/about.html>. Last updated May 18, 2018. Accessed June 25, 2019.
- . 2019. Waterfowl Hunting on the Complex. Available: <https://www.fws.gov/refuge/Sacramento/visit/hunting.html>. Last updated May 7, 2019. Accessed July 2, 2019.
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Transportation

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
TRANSPORTATION — Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Sutter County has a comprehensive transportation system to serve the diverse travel needs of the area. It includes State highways, local roads, urban arterials, rural highways and streets, bus transit services, freight rail, and airports.

Several State highways (State Routes [SRs] 20, 70, 99, and 113) pass through the vicinity and provide access to the project area. Local rural roads provide access to the project area. Pumping Plant No. 1 can be accessed from SR 99 either from the south via Sacramento Avenue or from the north via Tudor Road (SR 113) and Sawtelle Avenue; O'Banion Road provides direct east-west access between SR 99 and Pumping Plant No. 2; and Pumping Plant No. 3 can be accessed from SR 20 to the north via Acacia Avenue and Franklin Road.

Fixed-route and demand-responsive transit services are provided in Sutter County by Yuba-Sutter Transit. In addition to the agency's local routes and commuter routes to and from Sacramento, three rural fixed routes are available: the Live Oak Route, from Live Oak to Yuba City and Marysville; the Foothills Route, from Brownsville, Oregon House, Willow Glen, and Loma Rica to Marysville; and the Wheatland Route, from Wheatland to Linda and Marysville (Yuba-Sutter Transit Authority, 2019). The *Yuba Sutter Short Range Transit Plan* identified rural route service to Plumas Lake as one of several additional service enhancements for consideration for 2020 to 2025 (Yuba-Sutter Transit Authority, 2015).

The *County of Sutter Pedestrian & Bicycle Master Plan 2012* identifies existing bikeway and pedestrian facilities in Sutter County. No bike facilities exist in the project vicinity; the closest bike path, a Class II bike lane, lies along Acacia Avenue north of SR 20, north of Pumping Plant No. 3 (Sutter County, 2012:Figure 3). As identified in the master plan, the only off-street trail facility in unincorporated Sutter County that is designed for pedestrian use is an approximately 8-foot asphalt path that runs from Yuba City to the community of Sutter (Sutter County, 2012).

The Mobility Element of the *Sutter County 2030 General Plan* (Sutter County, 2011) identifies goals, policies, and implementation programs for a multimodal transportation network, streets and highways, transit, rail transportation, bikeways and pedestrians, air travel and airports, and

greenhouse gas reduction. (Greenhouse gas reduction is addressed in the *Greenhouse Gas Emissions* section of this IS/MND.)

The crown road on the East Levee of the Sutter Bypass is used by hunters, fishers, and wildlife viewers accessing the U.S. Fish and Wildlife Service's Sutter National Wildlife Refuge (south of Pumping Plant No. 3 and north of Pumping Plant No. 2) and the State-owned Sutter Bypass Wildlife Area. The refuge is open to the public February 15 through June 30 and on Wednesdays, Saturdays, and Sundays during waterfowl and upland game bird hunting season. Traffic also includes agricultural machinery using the levee crown road to reach the fields, as well as local rural residential traffic.

Discussion

- a) Construction activities would temporarily increase vehicle trips on area roadways. Heavy equipment (e.g., excavator, crane with pile driver attachment, front-end loader) would be mobilized to the project area and would leave when no longer needed. Trucks and other equipment would use County roads or State highways for a very short period during mobilization and demobilization. Access to the project area would be from Sawtelle Avenue, O'Banion Road, Acacia Avenue, and Franklin Road, and from SRs 20, 99, 70, and 113.

The proposed project would employ approximately five workers for a total of 6 months (1 month at each of the three pumping plant sites during each of the two project phases). Assuming that two workers would carpool to and from each site, but that the same number of workers would depart alone for lunch, approximately six round trips per day would be required over a total of 130 workdays for travel by construction workers. Operations would require fewer trips than during construction, and the trips would occur only occasionally for maintenance activities. The proposed project would result in a minimal increase in traffic levels along local roadways compared to existing conditions, and would not result in decreased travel times on roads in the project vicinity.

No transit, bicycle, or pedestrian facilities exist in the project vicinity. The proposed project would not conflict with the Mobility Element of the *Sutter County 2030 General Plan*, the *County of Sutter Pedestrian & Bicycle Master Plan 2012*, or the *Yuba Sutter Short Range Transit Plan*.

For the reasons described above, this impact would be **less than significant**.

- b) CEQA Section 15064.3(b) describes the criteria for analyzing transportation impacts. The provisions of Section 15064.3 will apply statewide beginning July 1, 2020; DWR, as lead agency for the proposed project, has elected to comply in advance of that date. Based on these criteria, vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. The proposed project would require the import and export of material for demolition backfilling and construction of access ramps, staging areas, and weir/stop log structures. All fill material would be obtained from a commercial source located within 50 miles of the project area, and all excavated material would be

- hauled away to an approved commercial disposal site within 50 miles of the project area. The proposed project would not result in a substantial increase in vehicle miles traveled. Therefore, the project would not conflict with or be inconsistent with CEQA Section 15064.3(b). This impact would be **less than significant**.
- c) The proposed project would not involve the design or construction of any new roadways. Access ramps from the levee crown road to the control buildings would be graded for use during construction. There would be no sharp curves or dangerous intersections along local roadways used for the project that would increase traffic safety hazards. Therefore, **no impact** would occur.
- d) Materials staging areas would be established for the proposed project in existing disturbed areas immediately adjacent to the landside of the Sutter Bypass East Levee. The levee crown road would be used for ingress and egress of construction equipment. Thus, the proposed project would not result in inadequate emergency access. **No impact** would occur.

References

- Sutter County. 2011. Sutter County General Plan. Adopted by Sutter County Board of Supervisors on March 29, 2011, Resolution No. 11-029. Marysville, California. Prepared in consultation with Atkins (formerly PBS&J), DKS Associates, West Yost Associates, and Willdan Financial Services. Chapter 6, *Mobility*.
- . 2012. County of Sutter Pedestrian & Bicycle Master Plan 2012. Marysville, California. Prepared by omni*means Engineers and Planners, Roseville, California. Chapter 2, *Existing Conditions*.
- Yuba-Sutter Transit Authority. 2015. Yuba-Sutter Short Range Transit Plan. Marysville, California. Prepared by LSC Transportation Consultants, Inc., Tahoe City, California. April 22, 2015.
- . 2019. Rural Routes. Available: <https://www.yubasuttertransit.com/rural-routes>. Accessed July 2, 2019.
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Tribal Cultural Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
TRIBAL CULTURAL RESOURCES —				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

This section relies on the information and findings presented in the technical report *Sutter Bypass Old Pumping Plant Removal and Gravity Drain Rehabilitation Project, Sutter County, California: Cultural Resources Inventory and Evaluation Report* (Hoffman and Cleveland, 2019). The technical report presents additional details on background context, Native American correspondence, and cultural resources identified.

Much of the background context and methodology for analyzing potential impacts of the proposed project on tribal cultural resources is the same as for the cultural resources impact analysis. Therefore, to avoid redundancy, the background context and methods information presented in the *Cultural Resources* section of this IS/MND is not repeated here.

This section uses the key term “tribal cultural resource.” Tribal cultural resources consist of sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed, or determined to be eligible for listing, in the National Register of Historic Places, the California Register of Historical Resources (California Register), or a local register of historical resources.

Records Search

The California Historical Resources Information System (CHRIS) records search findings are presented in the Cultural Resources section, above. The results are summarized below.

The Northeast Information Center (NEIC) at Chico State University has no record of any previously recorded cultural resources, including any that may qualify as tribal cultural resources, within 0.25 mile of the project area.

The NEIC has records of six cultural resources studies previously conducted within 0.25 mile of the project area. Five of these studies included some portion of the project area. No cultural resources, including any potential tribal cultural resources, were identified in the project area during any of these previous studies.

Ethnographic Literature Research

With respect to the project area, a review of ethnographic literature for the current investigation revealed the following:

- The Pumping Plant No. 1 portion of the project area is approximately 1.5 miles west of the documented Nisenan place *Ollash* (Wilson and Towne, 1978).
- The Pumping Plant No. 2 portion of the project area is approximately 4.8 miles east of the documented Patwin place *Ko-sim '-po* (Heizer and Hester, 1970).
- The Pumping Plant No. 3 portion of the project area is approximately 4.3 miles southwest of the documented Patwin place *O'no '-li* (Heizer and Hester, 1970).

Native American Correspondence

On November 19, 2018, DWR sent letters via certified mail to 15 representatives of California Native American tribes that had previously requested notification regarding DWR projects for potential consultation under Public Resources Code (PRC) Section 21080.3. These letters provided information about the proposed project and requested that the representatives notify DWR if they would like to consult pursuant to PRC Section 21080.3.

Environmental Science Associates (ESA) contacted the Native American Heritage Commission (NAHC) on November 28, 2018, requesting a search of the NAHC's Sacred Lands File and a list of Native American representatives who may be interested in the proposed project. The NAHC replied to ESA on November 30, 2018, stating that the Sacred Lands File has no record of sacred sites in the project area. The reply also included a list of Native American representatives to contact regarding these resources and their potential interest in the proposed project.

On December 13, 2018, DWR sent letters to the Native American contacts identified in the NAHC's reply who had not been sent letters from DWR regarding potential consultation under PRC Section 21080.3. These letters included information about the proposed project and requested that the recipients inform DWR about any cultural resources that could be affected by the proposed project.

DWR has received three responses from its outreach to Native American representatives regarding potential consultation on the proposed project pursuant to PRC Section 21080.3:

- On November 26, 2018, Jessica Mauck of the San Manuel Band of Mission Indians emailed DWR, stating that the tribe did not wish to consult on the proposed project.

- In a letter dated December 10, 2018, Leland Kinter of the Yocha Dehe Wintun Nation stated that the tribe did not wish to consult with DWR on the proposed project.
- In letters dated December 10 and December 27, 2018, United Auburn Indian Community of the Auburn Rancheria of California (UAIC) Chairperson Gene Whitehouse requested consultation between the UAIC and DWR on the proposed project.

On October 2, 2019, DWR sent an email to UAIC representatives Matthew Moore (Tribal Historic Preservation Officer), Melodi McAdamas, and Rebecca Adams. The email provided a summary of the cultural resources investigations for the proposed project; geographic information system data for the project; proposed mitigation measures (developed in consultation with UAIC on similar projects in the area); and a request asking how UAIC would like to proceed with consultation. On October 3, 2019, UAIC representative Anna Starkey responded to DWR by email, stating that UAIC believes there is low potential for the proposed project to affect cultural resources or tribal cultural resources, and that UAIC considers consultation on the proposed project pursuant to PRC Section 21080.3 to be concluded.

The mitigation measures in the *Cultural Resources* and *Tribal Cultural Resources* sections of this IS/MND were developed in consultation with UAIC as part of proposed project consultation pursuant to PRC Section 21080.3.

Field Survey

The methods for the field survey are presented in the Cultural Resources section. The survey results are summarized below.

ESA identified one archaeological resource (P-51-000320) and three architectural resources (P-51-000147, P-51-000318, and P-51-000319) in the project area. None of these resources are indigenous in origin; therefore, none appear to be potential tribal cultural resources.

Summary of Cultural Resources Identified

Through background research, Native American correspondence, and a field survey conducted for the proposed project, no tribal cultural resources—including indigenous archaeological resources or human remains that could qualify as tribal cultural resources—were identified in the project area.

Discussion

The two impact discussion questions from CEQA Guidelines Appendix G related to tribal cultural resources are discussed together below.

Impacts Analysis

- a.i, a.ii) No tribal cultural resources, as defined in PRC Section 21074, have been identified in the project area through archival research, field survey, or Native American consultation. Therefore, the proposed project is not anticipated to affect 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 project area, and if they are found to qualify as tribal cultural resources, pursuant to PRC Section 21074, any impacts of the proposed project on the resource would be potentially significant.

Mitigation Measure TCR-1: Implement Unanticipated-Discovery Protocol for Archaeological Resources, including Potential Tribal Cultural Resources.

If indigenous or historic-era archaeological resources are encountered during development or operation of the proposed project, all activity within 100 feet of the find shall cease and the find shall be flagged for avoidance. DWR and a qualified archaeologist, defined as one meeting the U.S. Secretary of the Interior's Professional Qualifications Standards for Archeology and with expertise in California archaeology, shall be immediately informed of the discovery. The qualified archaeologist shall inspect the discovery and shall notify DWR of their initial assessment. Indigenous archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (midden) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include building or structure footings and walls, and deposits of metal, glass, and/or ceramic refuse. If the qualified archaeologist determines that the resource is or is potentially indigenous in origin, culturally affiliated California Native American Tribes shall be contacted to assess the find and determine whether it is potentially a tribal cultural resource.

If DWR determines, based on recommendations from the qualified archaeologist and culturally affiliated California Native American Tribes, that the resource is indigenous, that the resource may qualify as a historical resource or unique archaeological resource (as defined in CEQA Guidelines Section 15064.5), or that the resource is a tribal cultural resource (as defined in PRC Section 21074), then the resource shall be avoided if feasible. Avoidance means that no activities associated with the project may impact cultural resources within the boundaries of the resource or any defined buffer zones. DWR shall determine whether avoidance is feasible considering factors such as the nature of the find, project design, costs, and other considerations.

If avoidance of an identified indigenous resource is not feasible, DWR shall consult with a qualified archaeologist, culturally affiliated California Native American Tribes, and other appropriate interested parties to determine treatment measures to minimize or mitigate any potential impacts on the resource pursuant to PRC Section 21083.2 and CEQA Guidelines Section 15126.4.

Once treatment measures have been determined, DWR shall prepare and implement an archaeological (and/or tribal cultural) resources management plan that outlines the treatment measures for the resource. Treatment measures typically consist of two steps:

- Determine whether the resource qualifies as a historical resource, unique archaeological resource, or tribal cultural resource through historical or ethnographic research, evaluative testing (excavation), and laboratory analysis.
- If it does qualify as one of these resource types, conduct data recovery (e.g., excavation, documentation, curation) targeting the recovery of the resource's important data.

The archaeological (and/or tribal cultural) resources management plan shall include all of the following elements:

- Background context.
- Research themes and research questions for assessing potential resource significance.
- Methods for evaluating the resource for California Register eligibility (e.g., ethnographic or historical research, evaluative test excavations, documentation, laboratory and geoarchaeological analyses, reporting) and, if an archaeological resource, for evaluating its eligibility as a unique archaeological resource under CEQA.
- Data recovery methods (e.g., background methods, field methods, laboratory methods, documentation, consultation, curation, reporting), if the resource is determined to be a historical resource, unique archaeological resource, or tribal cultural resource.

Any treatment measures implemented shall be documented in a professional-level technical report (e.g., archaeological testing results report, archaeological data recovery report, ethnographic report) to be authored by a qualified archaeologist and filed with CHRIS. Construction work at the location of the find may commence upon completion of the approved treatment and authorization by DWR. Work may proceed in other parts of the project area while the mitigation is being carried out.

If DWR determines during project implementation that portions of the project area may be sensitive for archaeological resources or tribal cultural resources, DWR may authorize construction monitoring of these locations by a qualified archaeologist and Native American monitor. Any monitoring by a Native American monitor shall be done under agreements between DWR and culturally affiliated California Native American Tribes.

Mitigation Measure TCR-2: Implement Unanticipated-Discovery Protocol for Human Remains.

If human remains are uncovered during construction, all work shall immediately halt within 100 feet of the find and the Sutter County Coroner shall be contacted to evaluate the remains and follow the procedures and protocols set forth in CEQA Guidelines Section 15064.5(e)(1). If the county coroner determines that the remains are Native American, Sutter County shall contact the NAHC, in accordance with California Health and Safety Code Section 7050.5(c) and PRC Section 5097.98. As required by PRC Section 5097.98, DWR shall ensure that further development activity avoids damage or disturbance in the immediate vicinity of the Native

American human remains, according to generally accepted cultural or archaeological standards or practices, until DWR has conferred with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.

With implementation of Mitigation Measures TCR-1 and TCR-2, which were developed in consultation with UAIC as part of proposed project consultation pursuant to PRC Section 21080.3, DWR would reduce the potential for significant impacts on tribal cultural resources through cultural resources awareness and sensitivity training for project personnel; implementation of a protocol for unanticipated discovery of archaeological resources; and identification of human remains, consultation, and avoidance. Because development and operation of the proposed project with implementation of Mitigation Measures TCR-1 and TCR-2 would not adversely affect tribal cultural resources, this impact would be **less than significant with mitigation incorporated**.

References

- Heizer, Robert F., and Thomas R. Hester. 1970. Names and Locations of Some Ethnographic Patwin and Maidu Indian Villages. *University of California Archaeological Research Facility Contributions* 9(5):79–118. Berkeley: University of California Press, Berkeley.
- Hoffman, Robin, and Katherine Cleveland. 2019. *Sutter Bypass Old Pumping Plant Removal and Gravity Drain Rehabilitation Project, Sutter County, California: Cultural Resources Inventory and Evaluation Report*. Prepared by Environmental Science Associates, Petaluma, California. Prepared for California Department of Water Resources. May.
- Wilson, Norman L., and Arlean H. Towne. 1978. Nisenan. In *California*, ed. Robert F. Heizer, 387–397. *Handbook of North American Indians*, Vol. 8, gen. ed. William C. Sturtevant. Washington, D.C. Smithsonian Institution.
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Utilities and Service Systems

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
UTILITIES AND SERVICE SYSTEMS —				
Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

Most of Sutter County uses groundwater for potable water supplies. In rural areas, the groundwater is pumped mainly by privately owned wells. The groundwater resources in Sutter County consist of three subbasins of the Sacramento Valley Groundwater Basin: the East Butte, North American, and Sutter Subbasins.

Surface water is used in Sutter County primarily for agricultural operations. Surface water also comprises a portion of the supply for Yuba City, and has been identified as a part of the water supply strategy for the approved *Sutter Pointe Specific Plan*. Surface water for agricultural and urban uses is obtained from the Sacramento and Feather Rivers.

The Sutter Mutual Water Company (Sutter Mutual) is the nearest water supplier in the project vicinity and serves untreated water for irrigation. The adequacy of Sutter Mutual's water supply is dependent on the type of crops being grown during that year and the availability of water from the Sacramento River. When rice has been widely planted, the water demand exceeds the available water supply. In these situations, Sutter Mutual has purchased water from other sources. When crops such as tomatoes, carrots, and beans are widely planted, the available water supply is adequate. During drought years, Sutter Mutual is short of water because its supplies are reduced (Sutter County, 2008).

In most of unincorporated Sutter County, wastewater is treated and disposed of through on-site wastewater treatment systems (septic tanks). Septic tanks are designed with varying capacities

depending upon the amount of waste generated. Sutter County requires that permits for septic systems be obtained through the Community Services Department (Sutter County, 2011). The cities of Yuba City and Live Oak and the communities of Robbins and Rio Ramaza are the only areas in the county with sanitary sewer collection systems and wastewater treatment facilities (Sutter County, 2010).

Pacific Gas and Electric Company provides electrical and natural gas service to customers in Sutter County. Most electrical service in the county is carried through aboveground lines, although new urban development is typically served by underground lines. Sutter County has six energy generation facilities: two “peaker” facilities, the Yuba City Energy Center and Feather River Energy Center operated by Calpine, and four cogeneration facilities that sell excess power to Pacific Gas and Electric Company and the open market. Natural gas service is provided only to the cities of Yuba City and Live Oak and the community of Nicolaus (Sutter County, 2010). Telephone, cable television, and other telecommunications services are provided by a variety of private companies.

Recology Yuba Sutter provides yard waste, recycling, and garbage collection service to the communities of Beale Air Force Base, Live Oak, Marysville, Wheatland, Yuba City, and the counties of Yuba and Sutter (Recology Yuba-Sutter, 2019). The nearest disposal locations are as follows:

- **Yuba-Sutter Household Hazardous Waste Collection Facility**, 134 Burns Drive, Yuba City. This facility accepts hazardous waste items, such as batteries, e-waste, fluorescent lights, and sharps, from residents of Yuba and Sutter Counties (Recology Yuba-Sutter, 2019).
- **Ponderosa Transfer Station**, 17219 Ponderosa Way, Brownsville. This location is open to the public for material drop-off and accepts municipal solid waste, yard debris, and construction and demolition material (Recology Yuba-Sutter, 2019). The facility, located on one acre, has a maximum permitted throughput of 96 tons per day (CalRecycle, 2019a).
- **Feather River Organics**, 3001 North Levee Road, Marysville. This facility processes approximately 30,000 tons of municipal and commercial organics per year and manufactures compost made from yard trimmings and food scraps collected from Yuba, Sutter, and surrounding counties (Recology Yuba-Sutter, 2019). Feather River Organics has a design capacity of 40,000 tons for composting, with permitted maximum tonnage of 400 tons per day and a permitted traffic volume of 154 vehicles per day (CalRecycle, 2015).
- **Ostrom Road Landfill**, 5900 Ostrom Road, Wheatland (Yuba County). This facility provides solid waste disposal services to municipal and commercial customers in Yuba, Sutter, Butte, Nevada, and Colusa Counties (Recology Yuba-Sutter, 2019). The landfill has a maximum permitted throughput of 3,000 tons per day, remaining capacity of 39,223,000 cubic yards, and an estimated closure date of December 31, 2066 (CalRecycle, 2019b).

Discussion

- a) The proposed project would employ approximately five workers for a total of 6 months (1 month at each of the three pumping plant sites during each of the two project phases). As discussed in the *Population and Housing* section of this IS/MND, it is anticipated that these temporary employees would come from the existing labor pool in Sutter County

- and would not generate an increase in the population relative to existing conditions. Therefore, the proposed project would not create a need to construct new or modified utilities and service systems. **No impact** would occur.
- b) Water demand during construction would be temporary and minor for dust suppression, and no new or expanded entitlements would be required. Water would likely be provided by the contractor using a water truck. In addition, as discussed in response to checklist question a) above and in the *Population and Housing* section, the proposed project would not generate an increase in the population relative to existing conditions. Therefore, potential impacts associated with the availability of water supplies would be **less than significant**.
 - c) It is anticipated that wastewater generation associated with the proposed project would be limited to portable toilets used at the pumping plant sites. As described above, the proposed project would employ approximately five workers for a total of 6 months (1 month at each of the three pumping plant sites during each of the two project phases). Given the small number of construction workers and the brevity of the construction periods, wastewater generation by the proposed project would not be substantial enough to affect wastewater treatment capacity. This impact would be **less than significant**.
 - d, e) The proposed project would generate a small volume of construction waste from vegetation removal, debris removal, and sediment removal. Organic material would be hauled to a certified disposal site in pickup or dump trucks. Non-organic materials such as trash would be hauled off-site to certified disposal sites. Excavated sediment would be hauled to an approved commercial disposal site within 50 miles of the project area. The Ostrom Road Landfill in Wheatland has a remaining permitted capacity of 39,223,000 cubic yards; therefore, the proposed project would not generate a volume of waste that would exceed the permitted capacity of applicable landfills serving the project area. Furthermore, all waste would be disposed of in accordance with federal, State, and local statutes and regulations. This impact would be **less than significant**.

References

- CalRecycle (California Department of Resources Recycling and Recovery). 2015. Solid Waste Facility Permit 58-AA-0015 for Feather River Organics, 3001 North Levee Road, Marysville, CA 95901. Approved by Yuba County Environmental Health, Marysville, CA; received by CalRecycle November 24, 2015. Available: <https://www2.calrecycle.ca.gov/PublicNotices/Details/1653>. Accessed July 2, 2019.
- . 2019a. SWIS Facility Detail: Ponderosa Transfer Station (58-AA-0010). Available: <https://www2.calrecycle.ca.gov/swfacilities/Directory/58-AA-0010/>. Accessed July 3, 2019.
- . 2019b. SWIS Facility Detail: Recology Ostrom Road LF Inc. (58-AA-0011). Available: <https://www2.calrecycle.ca.gov/SWFacilities/Directory/58-AA-0011/Detail/>. Accessed July 2, 2019.
- Recology Yuba-Sutter. 2019. Contact Us—Nearby Locations. Available: <https://www.recology.com/recology-yuba-sutter/contact/>. Accessed June 27, 2019.

Sutter County. 2008. Sutter County General Plan Technical Background Report. Prepared by PBS&J in partnership with West Yost & Associates, DKS Associates, MuniFinancial, and Applied Development Economics. February 2008. Chapter 3, *Infrastructure and Community Services*.

———. 2010. Sutter County General Plan Draft Environmental Impact Report. SCH No. 2010032074. Prepared by PBS&J. September 2010. Section 6.13, *Public Utilities*.

———. 2011. Sutter County 2030 General Plan. Adopted by Sutter County Board of Supervisors on March 29, 2011, Resolution No. 11-029. Prepared in consultation with Atkins (formerly PBS&J), DKS Associates, West Yost Associates, and Willdan Financial Services. Yuba City, California.

Wildfire

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
WILDFIRE — If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion

- a–d) The California Department of Forestry and Fire (CAL FIRE) has identified draft Fire Hazard Severity Zones for both Local Responsibility Areas (LRAs) and State Responsibility Areas (SRAs). SRAs are the official boundaries within which the State of California (through CAL FIRE) has the primary legal and financial responsibility for preventing and suppressing wildland fires. LRAs include incorporated cities and densely populated areas. Fire protection in these areas is typically provided by the city fire departments, fire protection districts, and counties, and by CAL FIRE under contract to local governments. These maps assign fire hazard ratings of either “moderate,” “high,” or “very high.”

The pumping plant sites are not located in or near an area designated as a SRA, nor are they classified as a very high fire hazard severity zone or located near a very high fire hazard severity zone. The pumping plant sites are mapped as LRA Unzoned (CAL FIRE, 2007, 2019). They are not within a wildland-urban interface. Therefore, the proposed project would not result in a substantial impact related to lands within very high fire hazard severity zones.

The Sutter County Emergency Operations Plan does not designate specific evacuation routes; this plan identifies major highways, interstates, and highways as primary evacuation routes (Sutter County, 2015). State Routes 20 and 99 are the closest major highways to the project area; the project area is not near either major highway, and project activities would not substantially impair an adopted emergency response or evacuation plan.

Further, the pumping plant sites are located in a relatively flat area, not subject to factors that exacerbate wildfire risks and without downslope areas that could be affected by potential slope instability or drainage changes. The proposed project would not include installation or maintenance of infrastructure that may exacerbate fire risks, such as new roads or fuel breaks, or new power lines.

For these reasons, impacts of the proposed project related to wildfire would be **less than significant**.

References

CAL FIRE (California Department of Forestry and Fire Protection). 2007. Draft Fire Hazards Severity Zones in LRA. Map. Scale 1:100,000.

———. 2019. FHSZ in SRA County Maps.

Sutter County. 2015. County of Sutter Emergency Operations Plan, Sutter Operational Area Annex 9: Evacuation and Mass Care/Shelter. February 2015.

Mandatory Findings of Significance

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
MANDATORY FINDINGS OF SIGNIFICANCE —				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

- a) Implementing the proposed project does not have the potential to degrade the quality of the environment or substantially reduce the habitat for fish or wildlife species or to affect endangered plants or animal species. As described in the *Biological Resources* section, none of the special-status species with potential to occur in the project area are likely to be directly or indirectly affected by installation of the proposed project with implementation of the identified mitigation measures. This impact would be **less than significant with mitigation incorporated**.
- b) Although the potential impacts of the proposed project would be largely restricted to temporary impacts of construction and short-term maintenance activities, the potential remains for the proposed project to cause impacts pertaining to biological resources, cultural resources, paleontological resources, and tribal cultural resources. The incremental effects of the proposed project, when viewed in connection with the effects of past, other current, and/or probable future projects, could be cumulatively considerable. As discussed in the *Cultural Resources* and *Tribal Cultural Resources* sections, the potential exists for encountering intact portions of previously unrecorded archaeological or tribal cultural resources, construction of the proposed project could result in the inadvertent discovery of undocumented archaeological materials or human remains, and/or the disturbance or destruction of a known historical or archaeological resource. Implementing Mitigation Measures CUL-1, CUL-2, TCR-1, and TCR-2 would reduce the potential contribution of the proposed project to cumulative impacts to less than considerable. As discussed in the *Geology and Soils* section, implementation of Mitigation Measure PALEO-1 would minimize potential impacts on paleontological resources, and reduce the reduce the potential contribution of the proposed project to

cumulative impacts to less than considerable. This impact would be **less than significant with mitigation incorporated**.

- c) As discussed in this IS/MND, implementing the proposed project would result in less-than-significant impacts associated with aesthetics, agriculture and forestry resources, air quality, energy, GHGs, hazards and hazardous materials, hydrology and water quality, noise, land use, mineral resources, noise, population and housing, public services, recreation, transportation, utilities and service systems, and wildfire. As discussed in the *Cultural Resources* and *Tribal Cultural Resources* sections, construction activities have the potential to disturb an archaeological resource, tribal cultural resource, or human remains. Implementing Mitigation Measures CUL-1 and CUL-2 would reduce this impact to a less-than-significant level. Therefore, with implementation of Mitigation Measures CUL-1 and CUL-2, the proposed project would not have environmental effects that could cause substantial adverse effects on human beings, either directly or indirectly. This impact would be **less than significant with mitigation incorporated**.
-

Appendix A

Air Quality and Greenhouse Gas Modeling Data

DWR - Old Pumping Plant - Sutter County, Annual

DWR - Old Pumping Plant
Sutter County, Annual**1.0 Project Characteristics**

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.50	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	61
Climate Zone	3			Operational Year	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	294	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

DWR - Old Pumping Plant - Sutter County, Annual

Project Characteristics - Revised CO2 emission factor for PG&E based on <https://www.pgecurrents.com/2018/03/26/independent-registry-confirms-record-low-carbon-emissions-for-pge/>

Land Use - Unit value assumed for Unit Amount. Lot acreage is the total disturbed area at all 3 sites

Construction Phase - Adjusted to project schedule

Off-road Equipment - Phase not included

Off-road Equipment - Phase not included

Off-road Equipment - Phase not included

Off-road Equipment - phase not included

Off-road Equipment - Project data

Off-road Equipment - project data

Off-road Equipment - project data

Off-road Equipment - Project data

Off-road Equipment - project data

Off-road Equipment - project data

Trips and VMT - 5 workers per day

Grading - project data

Architectural Coating - adjusted

Energy Use -

Construction Off-road Equipment Mitigation - Tier 4 Final equipment used for Mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Parking	250.00	150.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00

DWR - Old Pumping Plant - Sutter County, Annual

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	15.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	5.00	0.00
tblConstructionPhase	NumDays	100.00	0.00
tblConstructionPhase	NumDays	10.00	0.00
tblConstructionPhase	NumDays	2.00	22.00
tblConstructionPhase	NumDays	2.00	22.00
tblConstructionPhase	NumDays	2.00	22.00
tblConstructionPhase	NumDays	5.00	0.00
tblConstructionPhase	NumDays	1.00	22.00
tblConstructionPhase	NumDays	1.00	23.00
tblConstructionPhase	NumDays	1.00	21.00
tblGrading	AcresOfGrading	0.00	0.01
tblGrading	AcresOfGrading	0.00	0.01
tblGrading	AcresOfGrading	0.00	0.04
tblGrading	AcresOfGrading	0.00	0.19
tblGrading	AcresOfGrading	0.00	0.05

DWR - Old Pumping Plant - Sutter County, Annual

[illegible]

DWR - Old Pumping Plant - Sutter County, Annual

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00

DWR - Old Pumping Plant - Sutter County, Annual

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		PP#3 - Pumping Plant Work
tblOffRoadEquipment	PhaseName		PP#1 - Gravity Drain Work
tblOffRoadEquipment	PhaseName		PP#2 - Gravity Drain Work
tblOffRoadEquipment	PhaseName		PP#3 - Gravity Drain Work
tblOffRoadEquipment	PhaseName		PP#1 - Pumping Plant Work
tblOffRoadEquipment	PhaseName		PP#2 - Pumping Plant Work
tblOffRoadEquipment	PhaseName		PP#1 - Gravity Drain Work

DWR - Old Pumping Plant - Sutter County, Annual

tblOffRoadEquipment	PhaseName	PP#2 - Gravity Drain Work
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tblOffRoadEquipment	PhaseName	PP#2 - Gravity Drain Work
tblOffRoadEquipment	PhaseName	PP#3 - Gravity Drain Work
tblOffRoadEquipment	PhaseName	PP#1 - Pumping Plant Work
tblOffRoadEquipment	PhaseName	PP#2 - Pumping Plant Work
tblOffRoadEquipment	PhaseName	PP#3 - Pumping Plant Work
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tblOffRoadEquipment	PhaseName	PP#2 - Gravity Drain Work
tblOffRoadEquipment	PhaseName	PP#3 - Gravity Drain Work
tblOffRoadEquipment	PhaseName	PP#1 - Pumping Plant Work
tblOffRoadEquipment	PhaseName	PP#2 - Pumping Plant Work
tblOffRoadEquipment	PhaseName	PP#3 - Pumping Plant Work
tblOffRoadEquipment	PhaseName	PP#1 - Gravity Drain Work
tblOffRoadEquipment	PhaseName	PP#2 - Gravity Drain Work
tblOffRoadEquipment	PhaseName	PP#3 - Gravity Drain Work
tblOffRoadEquipment	PhaseName	PP#1 - Pumping Plant Work
tblOffRoadEquipment	PhaseName	PP#2 - Pumping Plant Work
tblOffRoadEquipment	PhaseName	PP#1 - Gravity Drain Work

DWR - Old Pumping Plant - Sutter County, Annual

tblOffRoadEquipment	PhaseName		PP#2 - Gravity Drain Work
tblOffRoadEquipment	PhaseName		PP#3 - Gravity Drain Work
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tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00

DWR - Old Pumping Plant - Sutter County, Annual

tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	294
tblTripsAndVMT	WorkerTripNumber	20.00	10.00
tblTripsAndVMT	WorkerTripNumber	28.00	10.00
tblTripsAndVMT	WorkerTripNumber	28.00	10.00
tblTripsAndVMT	WorkerTripNumber	28.00	10.00
tblTripsAndVMT	WorkerTripNumber	20.00	10.00
tblTripsAndVMT	WorkerTripNumber	20.00	10.00

2.0 Emissions Summary

DWR - Old Pumping Plant - Sutter County, Annual

2.1 Overall Construction**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0867	0.8781	0.6379	1.7800e-003	8.9500e-003	0.0344	0.0433	2.3600e-003	0.0325	0.0349	0.0000	157.4794	157.4794	0.0353	0.0000	158.3606
2021	0.0746	0.6616	0.5699	1.5700e-003	4.0400e-003	0.0276	0.0316	1.0700e-003	0.0261	0.0271	0.0000	137.7712	137.7712	0.0348	0.0000	138.6419
Maximum	0.0867	0.8781	0.6379	1.7800e-003	8.9500e-003	0.0344	0.0433	2.3600e-003	0.0325	0.0349	0.0000	157.4794	157.4794	0.0353	0.0000	158.3606

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0209	0.1684	0.8111	1.7800e-003	8.9500e-003	2.6100e-003	0.0116	2.3600e-003	2.5900e-003	4.9600e-003	0.0000	157.4793	157.4793	0.0353	0.0000	158.3604
2021	0.0191	0.0961	0.7793	1.5700e-003	4.0400e-003	2.4100e-003	6.4500e-003	1.0700e-003	2.4000e-003	3.4800e-003	0.0000	137.7710	137.7710	0.0348	0.0000	138.6417
Maximum	0.0209	0.1684	0.8111	1.7800e-003	8.9500e-003	2.6100e-003	0.0116	2.3600e-003	2.5900e-003	4.9600e-003	0.0000	157.4793	157.4793	0.0353	0.0000	158.3604

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	75.18	82.82	-31.68	0.00	0.00	91.89	75.95	0.00	91.48	86.39	0.00	0.00	0.00	0.00	0.00	0.00

DWR - Old Pumping Plant - Sutter County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2020	8-31-2020	0.9600	0.1879
5	6-1-2021	8-31-2021	0.7325	0.1142
		Highest	0.9600	0.1879

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.0700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.1000e-004	1.0200e-003	8.6000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	2.2899	2.2899	1.4000e-004	4.0000e-005	2.3066
Mobile	1.8600e-003	0.0222	0.0193	1.0000e-004	5.8200e-003	9.0000e-005	5.9000e-003	1.5700e-003	8.0000e-005	1.6500e-003	0.0000	8.9240	8.9240	6.2000e-004	0.0000	8.9395
Waste						0.0000	0.0000		0.0000	0.0000	0.2517	0.0000	0.2517	0.0149	0.0000	0.6236
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.1669	0.2402	7.5500e-003	1.8000e-004	0.4831
Total	7.0400e-003	0.0232	0.0202	1.1000e-004	5.8200e-003	1.7000e-004	5.9800e-003	1.5700e-003	1.6000e-004	1.7300e-003	0.3251	11.3808	11.7059	0.0232	2.2000e-004	12.3527

DWR - Old Pumping Plant - Sutter County, Annual

2.2 Overall Operational**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.0700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.1000e-004	1.0200e-003	8.6000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	2.2899	2.2899	1.4000e-004	4.0000e-005	2.3066
Mobile	1.8600e-003	0.0222	0.0193	1.0000e-004	5.8200e-003	9.0000e-005	5.9000e-003	1.5700e-003	8.0000e-005	1.6500e-003	0.0000	8.9240	8.9240	6.2000e-004	0.0000	8.9395
Waste						0.0000	0.0000		0.0000	0.0000	0.2517	0.0000	0.2517	0.0149	0.0000	0.6236
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.1669	0.2402	7.5500e-003	1.8000e-004	0.4831
Total	7.0400e-003	0.0232	0.0202	1.1000e-004	5.8200e-003	1.7000e-004	5.9800e-003	1.5700e-003	1.6000e-004	1.7300e-003	0.3251	11.3808	11.7059	0.0232	2.2000e-004	12.3527

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

DWR - Old Pumping Plant - Sutter County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2020	5/31/2020	5	0	
2	PP#1 - Gravity Drain Work	Site Preparation	6/1/2020	6/30/2020	5	22	
3	Building Construction	Building Construction	6/18/2020	6/17/2020	5	0	
4	PP#2 - Gravity Drain Work	Site Preparation	7/1/2020	7/31/2020	5	23	
5	PP#3 - Gravity Drain Work	Site Preparation	8/1/2020	8/31/2020	5	21	
6	Paving	Paving	11/5/2020	11/4/2020	5	0	
7	Architectural Coating	Architectural Coating	11/12/2020	11/11/2020	5	0	
8	PP#1 - Pumping Plant Work	Grading	6/1/2021	6/30/2021	5	22	
9	PP#2 - Pumping Plant Work	Grading	7/1/2021	7/31/2021	5	22	
10	PP#3 - Pumping Plant Work	Grading	8/1/2021	8/31/2021	5	22	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0
(Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	0.00	81	0.73
Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	0	0.00	97	0.37
PP#1 - Gravity Drain Work	Cranes	1	1.00	231	0.29
PP#1 - Gravity Drain Work	Dumpers/Tenders	2	6.00	16	0.38
PP#1 - Gravity Drain Work	Excavators	2	6.00	158	0.38

DWR - Old Pumping Plant - Sutter County, Annual

PP#1 - Gravity Drain Work	Graders	0	0.00	187	0.41
PP#1 - Gravity Drain Work	Off-Highway Trucks	2	6.00	402	0.38
PP#1 - Gravity Drain Work	Other Construction Equipment	1	1.00	172	0.42
PP#1 - Gravity Drain Work	Pumps	2	6.00	84	0.74
PP#1 - Gravity Drain Work	Rubber Tired Loaders	1	6.00	203	0.36
PP#1 - Gravity Drain Work	Tractors/Loaders/Backhoes	0	0.00	97	0.37
PP#1 - Pumping Plant Work	Concrete/Industrial Saws	0	0.00	81	0.73
PP#1 - Pumping Plant Work	Cranes	1	1.00	231	0.29
PP#1 - Pumping Plant Work	Excavators	1	6.00	158	0.38
PP#1 - Pumping Plant Work	Off-Highway Trucks	3	6.00	402	0.38
PP#1 - Pumping Plant Work	Other Construction Equipment	1	1.00	172	0.42
PP#1 - Pumping Plant Work	Pumps	2	6.00	84	0.74
PP#1 - Pumping Plant Work	Rubber Tired Dozers	0	0.00	247	0.40
PP#1 - Pumping Plant Work	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Building Construction	Cranes	0	0.00	231	0.29
Building Construction	Forklifts	0	0.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Paving	Pavers	0	0.00	130	0.42
Paving	Rollers	0	0.00	80	0.38
Paving	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Architectural Coating	Air Compressors	0	0.00	78	0.48
PP#2 - Gravity Drain Work	Cranes	1	1.00	231	0.29
PP#2 - Gravity Drain Work	Dumpers/Tenders	2	6.00	16	0.38
PP#2 - Gravity Drain Work	Excavators	2	6.00	158	0.38
PP#2 - Gravity Drain Work	Graders	0	0.00	187	0.41
PP#2 - Gravity Drain Work	Off-Highway Trucks	2	6.00	402	0.38

DWR - Old Pumping Plant - Sutter County, Annual

PP#2 - Gravity Drain Work	Other Construction Equipment	1	1.00	172	0.42
PP#2 - Gravity Drain Work	Pumps	2	6.00	84	0.74
PP#2 - Gravity Drain Work	Rubber Tired Loaders	1	6.00	203	0.36
PP#2 - Gravity Drain Work	Tractors/Loaders/Backhoes	0	0.00	97	0.37
PP#2 - Pumping Plant Work	Concrete/Industrial Saws	0	0.00	81	0.73
PP#2 - Pumping Plant Work	Cranes	1	1.00	231	0.29
PP#2 - Pumping Plant Work	Excavators	1	6.00	158	0.38
PP#2 - Pumping Plant Work	Off-Highway Trucks	3	6.00	402	0.38
PP#2 - Pumping Plant Work	Other Construction Equipment	1	1.00	172	0.42
PP#2 - Pumping Plant Work	Pumps	2	6.00	84	0.74
PP#2 - Pumping Plant Work	Rubber Tired Dozers	0	0.00	247	0.40
PP#2 - Pumping Plant Work	Tractors/Loaders/Backhoes	0	0.00	97	0.37
PP#3 - Gravity Drain Work	Cranes	1	1.00	231	0.29
PP#3 - Gravity Drain Work	Dumpers/Tenders	2	6.00	16	0.38
PP#3 - Gravity Drain Work	Excavators	2	6.00	158	0.38
PP#3 - Gravity Drain Work	Graders	0	0.00	187	0.41
PP#3 - Gravity Drain Work	Off-Highway Trucks	2	6.00	402	0.38
PP#3 - Gravity Drain Work	Other Construction Equipment	1	1.00	172	0.42
PP#3 - Gravity Drain Work	Pumps	2	6.00	84	0.74
PP#3 - Gravity Drain Work	Rubber Tired Loaders	1	6.00	203	0.36
PP#3 - Gravity Drain Work	Tractors/Loaders/Backhoes	0	0.00	97	0.37
PP#3 - Pumping Plant Work	Concrete/Industrial Saws	0	0.00	81	0.73
PP#3 - Pumping Plant Work	Cranes	1	1.00	231	0.29
PP#3 - Pumping Plant Work	Excavators	1	6.00	158	0.38
PP#3 - Pumping Plant Work	Off-Highway Trucks	3	6.00	402	0.38
PP#3 - Pumping Plant Work	Other Construction Equipment	1	1.00	172	0.42
PP#3 - Pumping Plant Work	Pumps	2	6.00	84	0.74

DWR - Old Pumping Plant - Sutter County, Annual

PP#3 - Pumping Plant Work	Rubber Tired Dozers	0	0.00	247	0.40
PP#3 - Pumping Plant Work	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
PP#1 - Gravity Drain Work	11	10.00	0.00	109.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
PP#1 - Pumping Plant Work	8	10.00	0.00	75.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
PP#2 - Gravity Drain Work	11	10.00	0.00	176.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
PP#2 - Pumping Plant Work	8	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
PP#3 - Gravity Drain Work	11	10.00	0.00	400.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
PP#3 - Pumping Plant Work	8	10.00	0.00	81.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

DWR - Old Pumping Plant - Sutter County, Annual

3.2 Demolition - 2020

Unmitigated Construction On-Site

[illegible]

Unmitigated Construction Off-Site

[illegible]

DWR - Old Pumping Plant - Sutter County, Annual

3.2 Demolition - 2020

Mitigated Construction On-Site

[illegible]

Mitigated Construction Off-Site

[illegible]

DWR - Old Pumping Plant - Sutter County, Annual

3.3 PP#1 - Gravity Drain Work - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5000e-004	0.0000	1.5000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0276	0.2610	0.2051	4.9000e-004		0.0113	0.0113		0.0107	0.0107	0.0000	42.8364	42.8364	0.0112	0.0000	43.1164
Total	0.0276	0.2610	0.2051	4.9000e-004	1.5000e-004	0.0113	0.0115	2.0000e-005	0.0107	0.0107	0.0000	42.8364	42.8364	0.0112	0.0000	43.1164

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.4000e-004	0.0150	2.1400e-003	4.0000e-005	9.2000e-004	5.0000e-005	9.8000e-004	2.5000e-004	5.0000e-005	3.1000e-004	0.0000	4.2670	4.2670	2.5000e-004	0.0000	4.2733
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	3.2000e-004	3.0700e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.8000e-004	2.3000e-004	0.0000	2.4000e-004	0.0000	0.7182	0.7182	2.0000e-005	0.0000	0.7188
Total	8.5000e-004	0.0153	5.2100e-003	5.0000e-005	1.7900e-003	6.0000e-005	1.8600e-003	4.8000e-004	5.0000e-005	5.5000e-004	0.0000	4.9852	4.9852	2.7000e-004	0.0000	4.9921

DWR - Old Pumping Plant - Sutter County, Annual

3.3 PP#1 - Gravity Drain Work - 2020**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5000e-004	0.0000	1.5000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.6400e-003	0.0245	0.2628	4.9000e-004		7.5000e-004	7.5000e-004		7.5000e-004	7.5000e-004	0.0000	42.8364	42.8364	0.0112	0.0000	43.1163
Total	5.6400e-003	0.0245	0.2628	4.9000e-004	1.5000e-004	7.5000e-004	9.0000e-004	2.0000e-005	7.5000e-004	7.7000e-004	0.0000	42.8364	42.8364	0.0112	0.0000	43.1163

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.4000e-004	0.0150	2.1400e-003	4.0000e-005	9.2000e-004	5.0000e-005	9.8000e-004	2.5000e-004	5.0000e-005	3.1000e-004	0.0000	4.2670	4.2670	2.5000e-004	0.0000	4.2733
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	3.2000e-004	3.0700e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.8000e-004	2.3000e-004	0.0000	2.4000e-004	0.0000	0.7182	0.7182	2.0000e-005	0.0000	0.7188
Total	8.5000e-004	0.0153	5.2100e-003	5.0000e-005	1.7900e-003	6.0000e-005	1.8600e-003	4.8000e-004	5.0000e-005	5.5000e-004	0.0000	4.9852	4.9852	2.7000e-004	0.0000	4.9921

DWR - Old Pumping Plant - Sutter County, Annual

3.4 Building Construction - 2020

Unmitigated Construction On-Site

[illegible]

Unmitigated Construction Off-Site

[illegible]

DWR - Old Pumping Plant - Sutter County, Annual

3.4 Building Construction - 2020

Mitigated Construction On-Site

[illegible]

Mitigated Construction Off-Site

[illegible]

DWR - Old Pumping Plant - Sutter County, Annual

3.5 PP#2 - Gravity Drain Work - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1000e-004	0.0000	1.1000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0288	0.2729	0.2144	5.1000e-004		0.0119	0.0119		0.0112	0.0112	0.0000	44.7835	44.7835	0.0117	0.0000	45.0762
Total	0.0288	0.2729	0.2144	5.1000e-004	1.1000e-004	0.0119	0.0120	1.0000e-005	0.0112	0.0112	0.0000	44.7835	44.7835	0.0117	0.0000	45.0762

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.1000e-004	0.0242	3.4600e-003	7.0000e-005	1.4900e-003	9.0000e-005	1.5800e-003	4.1000e-004	8.0000e-005	4.9000e-004	0.0000	6.8898	6.8898	4.1000e-004	0.0000	6.9000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e-004	3.4000e-004	3.2100e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7509	0.7509	2.0000e-005	0.0000	0.7514
Total	1.1300e-003	0.0245	6.6700e-003	8.0000e-005	2.4000e-003	1.0000e-004	2.5000e-003	6.5000e-004	9.0000e-005	7.4000e-004	0.0000	7.6407	7.6407	4.3000e-004	0.0000	7.6514

DWR - Old Pumping Plant - Sutter County, Annual

3.5 PP#2 - Gravity Drain Work - 2020**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1000e-004	0.0000	1.1000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9000e-003	0.0256	0.2748	5.1000e-004		7.9000e-004	7.9000e-004		7.9000e-004	7.9000e-004	0.0000	44.7835	44.7835	0.0117	0.0000	45.0762
Total	5.9000e-003	0.0256	0.2748	5.1000e-004	1.1000e-004	7.9000e-004	9.0000e-004	1.0000e-005	7.9000e-004	8.0000e-004	0.0000	44.7835	44.7835	0.0117	0.0000	45.0762

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.1000e-004	0.0242	3.4600e-003	7.0000e-005	1.4900e-003	9.0000e-005	1.5800e-003	4.1000e-004	8.0000e-005	4.9000e-004	0.0000	6.8898	6.8898	4.1000e-004	0.0000	6.9000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e-004	3.4000e-004	3.2100e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7509	0.7509	2.0000e-005	0.0000	0.7514
Total	1.1300e-003	0.0245	6.6700e-003	8.0000e-005	2.4000e-003	1.0000e-004	2.5000e-003	6.5000e-004	9.0000e-005	7.4000e-004	0.0000	7.6407	7.6407	4.3000e-004	0.0000	7.6514

DWR - Old Pumping Plant - Sutter County, Annual

3.6 PP#3 - Gravity Drain Work - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0263	0.2492	0.1958	4.7000e-004		0.0108	0.0108		0.0102	0.0102	0.0000	40.8893	40.8893	0.0107	0.0000	41.1566
Total	0.0263	0.2492	0.1958	4.7000e-004	2.7000e-004	0.0108	0.0111	4.0000e-005	0.0102	0.0103	0.0000	40.8893	40.8893	0.0107	0.0000	41.1566

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.6100e-003	0.0549	7.8500e-003	1.6000e-004	3.3900e-003	2.0000e-004	3.5900e-003	9.3000e-004	1.9000e-004	1.1200e-003	0.0000	15.6587	15.6587	9.2000e-004	0.0000	15.6818
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	3.1000e-004	2.9300e-003	1.0000e-005	8.3000e-004	1.0000e-005	8.4000e-004	2.2000e-004	0.0000	2.3000e-004	0.0000	0.6856	0.6856	2.0000e-005	0.0000	0.6861
Total	2.0000e-003	0.0552	0.0108	1.7000e-004	4.2200e-003	2.1000e-004	4.4300e-003	1.1500e-003	1.9000e-004	1.3500e-003	0.0000	16.3443	16.3443	9.4000e-004	0.0000	16.3679

DWR - Old Pumping Plant - Sutter County, Annual

3.6 PP#3 - Gravity Drain Work - 2020**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.3900e-003	0.0233	0.2509	4.7000e-004		7.2000e-004	7.2000e-004		7.2000e-004	7.2000e-004	0.0000	40.8893	40.8893	0.0107	0.0000	41.1565
Total	5.3900e-003	0.0233	0.2509	4.7000e-004	2.7000e-004	7.2000e-004	9.9000e-004	4.0000e-005	7.2000e-004	7.6000e-004	0.0000	40.8893	40.8893	0.0107	0.0000	41.1565

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.6100e-003	0.0549	7.8500e-003	1.6000e-004	3.3900e-003	2.0000e-004	3.5900e-003	9.3000e-004	1.9000e-004	1.1200e-003	0.0000	15.6587	15.6587	9.2000e-004	0.0000	15.6818
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	3.1000e-004	2.9300e-003	1.0000e-005	8.3000e-004	1.0000e-005	8.4000e-004	2.2000e-004	0.0000	2.3000e-004	0.0000	0.6856	0.6856	2.0000e-005	0.0000	0.6861
Total	2.0000e-003	0.0552	0.0108	1.7000e-004	4.2200e-003	2.1000e-004	4.4300e-003	1.1500e-003	1.9000e-004	1.3500e-003	0.0000	16.3443	16.3443	9.4000e-004	0.0000	16.3679

DWR - Old Pumping Plant - Sutter County, Annual

3.7 Paving - 2020

Unmitigated Construction On-Site

[illegible]

Unmitigated Construction Off-Site

[illegible]

DWR - Old Pumping Plant - Sutter County, Annual

3.7 Paving - 2020

Mitigated Construction On-Site

[illegible]

Mitigated Construction Off-Site

[illegible]

DWR - Old Pumping Plant - Sutter County, Annual

3.8 Architectural Coating - 2020

Unmitigated Construction On-Site

[illegible]

Unmitigated Construction Off-Site

[illegible]

DWR - Old Pumping Plant - Sutter County, Annual

3.8 Architectural Coating - 2020

Mitigated Construction On-Site

[illegible]

Mitigated Construction Off-Site

[illegible]

DWR - Old Pumping Plant - Sutter County, Annual

3.9 PP#1 - Pumping Plant Work - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0243	0.2137	0.1862	4.9000e-004		9.1600e-003	9.1600e-003		8.6600e-003	8.6600e-003	0.0000	43.2195	43.2195	0.0115	0.0000	43.5063
Total	0.0243	0.2137	0.1862	4.9000e-004	4.0000e-005	9.1600e-003	9.2000e-003	1.0000e-005	8.6600e-003	8.6700e-003	0.0000	43.2195	43.2195	0.0115	0.0000	43.5063

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.8000e-004	9.4600e-003	1.4100e-003	3.0000e-005	6.4000e-004	3.0000e-005	6.7000e-004	1.8000e-004	3.0000e-005	2.1000e-004	0.0000	2.9013	2.9013	1.7000e-004	0.0000	2.9056
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.8000e-004	2.7700e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.8000e-004	2.3000e-004	0.0000	2.4000e-004	0.0000	0.6927	0.6927	2.0000e-005	0.0000	0.6932
Total	6.5000e-004	9.7400e-003	4.1800e-003	4.0000e-005	1.5100e-003	4.0000e-005	1.5500e-003	4.1000e-004	3.0000e-005	4.5000e-004	0.0000	3.5939	3.5939	1.9000e-004	0.0000	3.5987

DWR - Old Pumping Plant - Sutter County, Annual

3.9 PP#1 - Pumping Plant Work - 2021**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.8100e-003	0.0252	0.2560	4.9000e-004		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	43.2195	43.2195	0.0115	0.0000	43.5062
Total	5.8100e-003	0.0252	0.2560	4.9000e-004	4.0000e-005	7.8000e-004	8.2000e-004	1.0000e-005	7.8000e-004	7.9000e-004	0.0000	43.2195	43.2195	0.0115	0.0000	43.5062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.8000e-004	9.4600e-003	1.4100e-003	3.0000e-005	6.4000e-004	3.0000e-005	6.7000e-004	1.8000e-004	3.0000e-005	2.1000e-004	0.0000	2.9013	2.9013	1.7000e-004	0.0000	2.9056
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.8000e-004	2.7700e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.8000e-004	2.3000e-004	0.0000	2.4000e-004	0.0000	0.6927	0.6927	2.0000e-005	0.0000	0.6932
Total	6.5000e-004	9.7400e-003	4.1800e-003	4.0000e-005	1.5100e-003	4.0000e-005	1.5500e-003	4.1000e-004	3.0000e-005	4.5000e-004	0.0000	3.5939	3.5939	1.9000e-004	0.0000	3.5987

DWR - Old Pumping Plant - Sutter County, Annual

3.10 PP#2 - Pumping Plant Work - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0243	0.2137	0.1862	4.9000e-004		9.1600e-003	9.1600e-003		8.6600e-003	8.6600e-003	0.0000	43.2195	43.2195	0.0115	0.0000	43.5063
Total	0.0243	0.2137	0.1862	4.9000e-004	2.0000e-005	9.1600e-003	9.1800e-003	0.0000	8.6600e-003	8.6600e-003	0.0000	43.2195	43.2195	0.0115	0.0000	43.5063

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.8000e-004	2.7700e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.8000e-004	2.3000e-004	0.0000	2.4000e-004	0.0000	0.6927	0.6927	2.0000e-005	0.0000	0.6932
Total	3.7000e-004	2.8000e-004	2.7700e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.8000e-004	2.3000e-004	0.0000	2.4000e-004	0.0000	0.6927	0.6927	2.0000e-005	0.0000	0.6932

DWR - Old Pumping Plant - Sutter County, Annual

3.10 PP#2 - Pumping Plant Work - 2021**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.8100e-003	0.0252	0.2560	4.9000e-004		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	43.2195	43.2195	0.0115	0.0000	43.5062
Total	5.8100e-003	0.0252	0.2560	4.9000e-004	2.0000e-005	7.8000e-004	8.0000e-004	0.0000	7.8000e-004	7.8000e-004	0.0000	43.2195	43.2195	0.0115	0.0000	43.5062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.8000e-004	2.7700e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.8000e-004	2.3000e-004	0.0000	2.4000e-004	0.0000	0.6927	0.6927	2.0000e-005	0.0000	0.6932
Total	3.7000e-004	2.8000e-004	2.7700e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.8000e-004	2.3000e-004	0.0000	2.4000e-004	0.0000	0.6927	0.6927	2.0000e-005	0.0000	0.6932

DWR - Old Pumping Plant - Sutter County, Annual

3.11 PP#3 - Pumping Plant Work - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0243	0.2137	0.1862	4.9000e-004		9.1600e-003	9.1600e-003		8.6600e-003	8.6600e-003	0.0000	43.2195	43.2195	0.0115	0.0000	43.5063
Total	0.0243	0.2137	0.1862	4.9000e-004	4.0000e-005	9.1600e-003	9.2000e-003	1.0000e-005	8.6600e-003	8.6700e-003	0.0000	43.2195	43.2195	0.0115	0.0000	43.5063

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.1000e-004	0.0102	1.5200e-003	3.0000e-005	6.9000e-004	3.0000e-005	7.2000e-004	1.9000e-004	3.0000e-005	2.2000e-004	0.0000	3.1334	3.1334	1.9000e-004	0.0000	3.1380
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.8000e-004	2.7700e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.8000e-004	2.3000e-004	0.0000	2.4000e-004	0.0000	0.6927	0.6927	2.0000e-005	0.0000	0.6932
Total	6.8000e-004	0.0105	4.2900e-003	4.0000e-005	1.5600e-003	4.0000e-005	1.6000e-003	4.2000e-004	3.0000e-005	4.6000e-004	0.0000	3.8260	3.8260	2.1000e-004	0.0000	3.8312

DWR - Old Pumping Plant - Sutter County, Annual

3.11 PP#3 - Pumping Plant Work - 2021**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.8100e-003	0.0252	0.2560	4.9000e-004		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	43.2195	43.2195	0.0115	0.0000	43.5062
Total	5.8100e-003	0.0252	0.2560	4.9000e-004	4.0000e-005	7.8000e-004	8.2000e-004	1.0000e-005	7.8000e-004	7.9000e-004	0.0000	43.2195	43.2195	0.0115	0.0000	43.5062

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.1000e-004	0.0102	1.5200e-003	3.0000e-005	6.9000e-004	3.0000e-005	7.2000e-004	1.9000e-004	3.0000e-005	2.2000e-004	0.0000	3.1334	3.1334	1.9000e-004	0.0000	3.1380
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.8000e-004	2.7700e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.8000e-004	2.3000e-004	0.0000	2.4000e-004	0.0000	0.6927	0.6927	2.0000e-005	0.0000	0.6932
Total	6.8000e-004	0.0105	4.2900e-003	4.0000e-005	1.5600e-003	4.0000e-005	1.6000e-003	4.2000e-004	3.0000e-005	4.6000e-004	0.0000	3.8260	3.8260	2.1000e-004	0.0000	3.8312

4.0 Operational Detail - Mobile

DWR - Old Pumping Plant - Sutter County, Annual

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.8600e-003	0.0222	0.0193	1.0000e-004	5.8200e-003	9.0000e-005	5.9000e-003	1.5700e-003	8.0000e-005	1.6500e-003	0.0000	8.9240	8.9240	6.2000e-004	0.0000	8.9395
Unmitigated	1.8600e-003	0.0222	0.0193	1.0000e-004	5.8200e-003	9.0000e-005	5.9000e-003	1.5700e-003	8.0000e-005	1.6500e-003	0.0000	8.9240	8.9240	6.2000e-004	0.0000	8.9395

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	6.97	1.32	0.68	15,369	15,369
Total	6.97	1.32	0.68	15,369	15,369

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.512796	0.026606	0.165464	0.111626	0.028005	0.006057	0.029203	0.113670	0.000830	0.000443	0.003492	0.001021	0.000787

DWR - Old Pumping Plant - Sutter County, Annual

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1.1762	1.1762	1.2000e-004	2.0000e-005	1.1863
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1.1762	1.1762	1.2000e-004	2.0000e-005	1.1863
NaturalGas Mitigated	1.1000e-004	1.0200e-003	8.6000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1137	1.1137	2.0000e-005	2.0000e-005	1.1203
NaturalGas Unmitigated	1.1000e-004	1.0200e-003	8.6000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1137	1.1137	2.0000e-005	2.0000e-005	1.1203

DWR - Old Pumping Plant - Sutter County, Annual

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	20870	1.1000e-004	1.0200e-003	8.6000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1137	1.1137	2.0000e-005	2.0000e-005	1.1203
Total		1.1000e-004	1.0200e-003	8.6000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1137	1.1137	2.0000e-005	2.0000e-005	1.1203

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	20870	1.1000e-004	1.0200e-003	8.6000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1137	1.1137	2.0000e-005	2.0000e-005	1.1203
Total		1.1000e-004	1.0200e-003	8.6000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1137	1.1137	2.0000e-005	2.0000e-005	1.1203

DWR - Old Pumping Plant - Sutter County, Annual

5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	8820	1.1762	1.2000e-004	2.0000e-005	1.1863
Total		1.1762	1.2000e-004	2.0000e-005	1.1863

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	8820	1.1762	1.2000e-004	2.0000e-005	1.1863
Total		1.1762	1.2000e-004	2.0000e-005	1.1863

6.0 Area Detail**6.1 Mitigation Measures Area**

DWR - Old Pumping Plant - Sutter County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.0700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	5.0700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.1600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	5.0700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

DWR - Old Pumping Plant - Sutter County, Annual

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.1600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	5.0700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

7.0 Water Detail**7.1 Mitigation Measures Water**

DWR - Old Pumping Plant - Sutter County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.2402	7.5500e-003	1.8000e-004	0.4831
Unmitigated	0.2402	7.5500e-003	1.8000e-004	0.4831

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.23125 / 0	0.2402	7.5500e-003	1.8000e-004	0.4831
Total		0.2402	7.5500e-003	1.8000e-004	0.4831

DWR - Old Pumping Plant - Sutter County, Annual

7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.23125 / 0	0.2402	7.5500e-003	1.8000e-004	0.4831
Total		0.2402	7.5500e-003	1.8000e-004	0.4831

8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.2517	0.0149	0.0000	0.6236
Unmitigated	0.2517	0.0149	0.0000	0.6236

DWR - Old Pumping Plant - Sutter County, Annual

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	1.24	0.2517	0.0149	0.0000	0.6236
Total		0.2517	0.0149	0.0000	0.6236

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	1.24	0.2517	0.0149	0.0000	0.6236
Total		0.2517	0.0149	0.0000	0.6236

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Construction Data Needed for CalEEMod

Data Available	CalEEMod default data
Will autopopulate, do not overwrite	Data Assumed

Project Information	
County	Sutter
Utility Company	Pacific Gas & Electric Company
Start Date of Construction	1-Jun-20
Operational Year	2022

Construction Schedule			
Construction Phase	From	To	Number of Workdays
PP-1: Gravity Drain Work	6/1/2020	6/30/2020	22
PP-2: Gravity Drain Work	7/1/2020	7/31/2020	23
PP-3: Gravity Drain Work	8/1/2020	8/31/2020	21
PP-1: Pumping Plant Work	6/1/2021	6/30/2021	22
PP-2: Pumping Plant Work	7/1/2021	7/31/2021	22
PP-3: Pumping Plant Work	8/1/2021	8/31/2021	22
Total Number of Workdays			132

Construction Equipment and Activity by Phase			
PP-1: Gravity Drain Work			
Available Construction Equipment in CalEEMod NOTE: Please click on a cell and select equipment from the drop down list	Number of Equipment used	Avg Operation (hrs/day)	Number of Work Days in the construction phase equipment is used
Off-Highway Trucks	2	8	22
Dumpers/Tenders	2	8	22
Excavators	2	8	22
Pumps	2	8	22
Crane	1	8	22
Other Construction Equipment	1	8	22
Rubber Tired Loaders	1	8	22

PP-2: Gravity Drain Work			
Available Construction Equipment in CalEEMod NOTE: Please click on a cell and select equipment from the drop down list	Number of Equipment used	Avg Operation (hrs/day)	Number of Work Days in the construction phase equipment is used
Off-Highway Trucks	2	8	23
Dumpers/Tenders	2	8	23
Excavators	2	8	23
Pumps	2	8	23
Crane	1	8	23
Other Construction Equipment	1	8	23
Rubber Tired Loaders	1	8	23

PP-3: Gravity Drain Work

Available Construction Equipment in CalEEMod NOTE: Please click on a cell and select equipment from the drop down list	Number of Equipment used	Avg Operation (hrs/day)	Number of Work Days in the construction phase equipment is used
Off-Highway Trucks	2	8	21
Dumpers/Tenders	2	8	21
Excavators	2	8	21
Pumps	2	8	21
Crane	1	8	21
Other Construction Equipment	1	8	21
Rubber Tired Loaders	1	8	21

PP-1: Pumping Plant Work

Available Construction Equipment in CalEEMod NOTE: Please click on a cell and select equipment from the drop down list	Number of Equipment used	Avg Operation (hrs/day)	Number of Work Days in the construction phase equipment is used
Off-Highway Trucks	2	8	22
Off-Highway Trucks	1	8	22
Excavator	1	8	22
Pumps	2	8	22
Crane	1	8	22
Other Construction Equipment	1	8	22

PP-2: Pumping Plant Work

Available Construction Equipment in CalEEMod NOTE: Please click on a cell and select equipment from the drop down list	Number of Equipment used	Avg Operation (hrs/day)	Number of Work Days in the construction phase equipment is used
Off-Highway Trucks	2	8	22
Off-Highway Trucks	1	8	22
Excavator	1	8	22
Pumps	2	8	22
Crane	1	8	22
Other Construction Equipment	1	8	22

PP-3: Pumping Plant Work

Available Construction Equipment in CalEEMod NOTE: Please click on a cell and select equipment from the drop down list	Number of Equipment used	Avg Operation (hrs/day)	Number of Work Days in the construction phase equipment is used
Off-Highway Trucks	2	8	22
Off-Highway Trucks	1	8	22
Excavator	1	8	22
Pumps	2	8	22
Crane	1	8	22
Other Construction Equipment	1	8	22

EMISSIONS SUMMARIES¹

UNCONTROLLED CONSTRUCTION EMISSIONS - Criteria Air Pollutants

No. of Construction Days	Tons over Construction Period				Average Pounds per day			
	ROG	NOx	PM-10	PM-2.5	ROG	NOx	PM-10	PM-2.5
132	0.16	1.54	0.07	0.06	2.4	23.3	1.1	0.9

MITIGATED CONSTRUCTION EMISSIONS - Criteria Air Pollutants - Tier 4 Final for all equipment

No. of Construction Days	Tons over Construction Period				Average Pounds per day			
	ROG	NOx	PM-10	PM-2.5	ROG	NOx	PM-10	PM-2.5
132	0.04	0.26	0.02	0.01	0.6	4.0	0.3	0.1

1. Assumes usages of 6 hrs per workday for all equipment except crane with pile driver. Crane and pile driver assumed to be used for 1 hr/workday based on data in PD that their usage would be limited to 5 days per site max.

CONSTRUCTION EMISSIONS - GHG as CO₂e

Total CO ₂ e (tons)	297
Number of construction years	2
Ave. annual emissions (tons/year)	148.5

Appendix B
**DWR GHG Emissions
Reduction Plan Consistency
Determination Form**

Greenhouse Gas(GHG) Emissions Reduction Plan Consistency Determination

For Projects Using Contractors or Other Outside Labor

This form is to be used by DWR project managers to document a DWR CEQA project's consistency with the DWR Greenhouse Gas Emissions Reduction Plan. This form is to be used only when DWR is the Lead Agency and when contractors or outside labor and equipment are used to implement the project.

Additional Guidance on filling out this form can be found at:
http://dwrclimatechange.water.ca.gov/guidance_resources.cfm

The DWR Greenhouse Gas Emissions Reduction Plan can be accessed at:
<https://water.ca.gov/Programs/All-Programs/Climate-Change-Program/Climate-Action-Plan>

Project Name:	Sutter Bypass Pumping Plant Rehabilitation Project
Environmental Document Type:	IS/MND
Manager's Name:	Kristin Ford
Manager's E-mail:	Kristin.Ford@water.ca.gov
Division:	Flood Management
Office, Branch, or Field Division:	Flood Maintenance Office

Short Project Description:
<p>The proposed project would involve retrofitting maintenance structures at three separate pumping plants (Pumping Plants No. 1, No. 2, and No. 3). Proposed project elements include :</p> <ul style="list-style-type: none"> • Demolition of abandoned control buildings at Pumping Plants No. 1 and No. 2 to allow access to the gravity drainpipe inlets; • Extension of gravity pipes and installation of trash racks and weir/stop log structures; and • Levee reconstruction and partial filling of the old sump basin at Pumping Plant No. 3.

Project GHG Emissions Summary:		
Total Construction Emissions	297.0	mtCO ₂ e
Maximum Annual Construction Emissions	158.4	mtCO ₂ e
<input checked="" type="checkbox"/> All other emissions from the project not accounted for above will occur as ongoing operational, maintenance, or business activity emissions and therefore have already been accounted for and analyzed in the GGERP.		

Extraordinary Construction Project Determination:	
<p>Do total project construction emissions exceed 25,000 mtCO₂e for the entire construction phase or exceed 12,500 mtCO₂e in any single year of construction?</p>	
<input checked="" type="checkbox"/> No- Additional analysis not required	<input type="checkbox"/> Yes - Project specific emissions mitigation measures have been included in the environmental analysis document for the project

Project GHG Reduction Plan Checklist:

☐ All Project Level GHG Emissions Reduction Measures have been incorporated into the design or implementation plan for the project. ([Project Level GHG Emissions Reduction Measures](#))

Or

☒ All feasible Project Level GHG Emissions Reduction Measures have been incorporated into the design or implementation plan for the project and Measures not incorporated have been listed and determined not to apply to the proposed project (include as an attachment)

☒ Project does not conflict with any of the Specific Action GHG Emissions Reduction Measures ([Specific Action GHG Emissions Reduction Measures](#))

Would implementation of the project result in additional energy demands on the SWP system of 15 GWh/yr or greater?

☐ Yes ☒ No

If you answered Yes, attach a letter documenting that the project has consulted with the DWR SWP Power and Risk Office regarding the additional power requirements of the project.

Is there substantial evidence that the effects of the proposed project may be cumulatively considerable notwithstanding the proposed project's compliance with the requirements of the DWR GHG Reduction Plan?

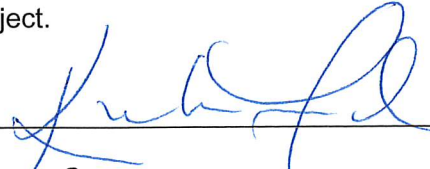
☐ Yes ☒ No

If you answered Yes, the project is not eligible for streamlined analysis of GHG emissions using the DWR GHG Emissions Reduction Plan. (See CEQA Guidelines, section 15183.5, subdivision (b)(2).)

Based on the information provided above and information provided in associated environmental documentation completed pursuant to the above referenced project, the DWR CEQA Climate Change Committee has determined that:

- ☒ The entire proposed project is consistent with the DWR Greenhouse Gas Reduction Plan and the greenhouse gases emitted by the project are covered by the plan's analysis.
- ☐ The operational and maintenance phase of the project is consistent with the DWR Greenhouse Gas Reduction Plan and the greenhouse gases emitted by the project are covered by the plan's analysis. Emissions from the construction phase of the project are not covered by the DWR Greenhouse Gas Emissions Reduction Plan and will be mitigated as part of the project.

Project Manager Signature:



Date:

10.15.19

C4 Approval Signature:

Jennifer Morales

Date:

11/12/2019

Attachments:

☐ GHG Emissions Inventory

☒ List and Explanation of excluded Project level GHG Emissions Reduction Measures

☐ SWP Power and Risk Office Consultation Letter

Links:

<https://current.water.ca.gov/programs/icc/SitePages/Home.aspx>

<https://water.ca.gov/Programs/All-Programs/Climate-Change-Program>

Appendix C

Biological Resources Survey Report

Final

SUTTER BYPASS PUMPING PLANT REHABILITATION PROJECT

Biological Resources Survey Report

Prepared for
California Department of Water Resources
Division of Flood Management

August 2019



Final

SUTTER BYPASS PUMPING PLANT REHABILITATION PROJECT

Biological Resources Survey Report

Prepared for
California Department of Water Resources
Division of Flood Management

August 2019

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TABLE OF CONTENTS

Sutter Bypass Pumping Plant Rehabilitation Project – Biological Resources Survey Report

	<u>Page</u>
Executive Summary	ES-1
Chapter 1, Introduction.....	1-1
1.1 Background and Purpose.....	1-1
1.2 Project Description	1-1
1.3 Project Location.....	1-1
1.4 Regulatory Context.....	1-3
Chapter 2, Methods.....	2-1
2.1 Study Area Definition.....	2-1
2.2 Survey Methodology.....	2-1
2.3 Review of Background Information.....	2-2
Chapter 3, Environmental Setting.....	3-1
3.1 Soil Types	3-1
3.2 Habitat Types	3-2
3.3 Wetlands and Other Waters of the United States and State	3-10
3.4 Special-Status Species	3-11
3.5 Wildlife Movement Corridors	3-21
3.6 Critical Habitat for Listed Fish and Wildlife Species	3-22
Chapter 4, Recommendations.....	4-1
4.1 Habitat Impacts	4-1
4.2 Impacts on Sensitive Biological Resources and Recommended Conservation Measures	4-1
Chapter 5, References and Report Preparation.....	5-1
5.1 References	5-1
5.2 Document Preparation	5-5

Appendices

- A. Regulatory Context
- B. Agency Lists and Special-Status Species Considered in the Study Area
- C. Plant Species Observed in the Study Area
- D. Wildlife Species Observed in the Study Area
- E. Study Area Photographs

Page**Figures**

Figure 1-1	Regional Location	1-2
Figure 1-2	Study Area Pumping Plant No. 1.....	1-5
Figure 1-3	Study Area Pumping Plant No. 2.....	1-6
Figure 1-4	Study Area Pumping Plant No. 3.....	1-7
Figure 3-1	Soils Map Pumping Plant No. 1.....	3-3
Figure 3-2	Soils Map Pumping Plant No. 2.....	3-4
Figure 3-3	Soils Map Pumping Plant No. 3.....	3-5
Figure 3-4	Habitat Types Pumping Plant No. 1	3-6
Figure 3-5	Habitat Types Pumping Plant No. 2	3-7
Figure 3-6	Habitat Types Pumping Plant No. 3	3-8
Figure 3-7	CNDDDB Giant Garter Snake Occurrences in the Project Vicinity	3-16
Figure 3-8	CNDDDB Swainson's Hawk Occurrences in the Project Vicinity	3-19

Tables

Table 1-1	Regulatory Agencies	1-4
Table 3-1	Acreages of Habitat Types in the Study Area.....	3-2
Table 4-1	Recommended Restricted Activity Dates and Setback Distances by Level of Disturbance for Burrowing Owls.....	4-12

Acronyms and Other Abbreviations

1987 Manual	1987 <i>Corps of Engineers Wetland Delineation Manual</i>
°F	degrees Fahrenheit
Arid West Supplement	<i>Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region</i> (Version 2.0)
BMP	best management practice
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
DWR	California Department of Water Resources
ESA	Environmental Science Associates
FESA	Federal Endangered Species Act
FR	<i>Federal Register</i>
NEPA	National Environmental Policy Act
NRCS	National Resources Conservation Service
project, proposed project	Sutter Bypass Pumping Plant Rehabilitation Project
report	biological resources survey report
SWPPP	storm water pollution prevention plan
USFWS	U.S. Fish and Wildlife Service

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EXECUTIVE SUMMARY

Environmental Science Associates conducted a biological resources survey for the Sutter Bypass Pumping Plant Rehabilitation Project (project or proposed project), located in Sutter County, California. The proposed project has three separate work areas that together compose the 3.31-acre study area: Pumping Plant No. 1 (0.79 acre), Pumping Plant No. 2 (1.51 acre), and Pumping Plant No. 3 (1.01 acre). The California Department of Water Resources proposes to retrofit maintenance structures at each pumping plant. Project elements include:

- Demolition of control buildings at Pumping Plants No. 1 and No. 2
- Extension of gravity pipes and installation of trash racks and weir/stop log structures
- Reconstruction of the levee and partial filling of the old sump basin at Pumping Plant No. 3

The study area includes the work areas and staging areas for all project elements at each pumping plant.

The purpose of this report is to assess the suitability of the study area to support special-status species and sensitive habitat types; recommend regulatory permitting or further analysis that may be required; and recommend conservation measures to avoid or minimize potential impacts on special-status species and sensitive habitat types.

The following habitat types are present at all three pumping plants: ruderal, annual grassland, developed, and perennial riverine. Additionally, Himalayan blackberry brambles occur at Pumping Plant No. 2 and an inlet basin occurs at Pumping Plants No. 1 and 2. The perennial riverine and inlet basin habitats are likely to be considered waters of the United States and State by the U.S. Army Corps of Engineers and the Central Valley Regional Water Quality Control Board, respectively. Therefore, project work within these features would require authorization by a nationwide permit issued under Section 404 of the Clean Water Act (CWA), and would need a CWA Section 401 water quality certification. Additionally, this activity would require a California Fish and Game Code Section 1600 lake and streambed alteration agreement.

No habitat for State-listed or federally listed plant species is present in the study area. However, the perennial riverine community provides habitat for woolly rose-mallow (*Hibiscus lasiocarpus* var. *occidentalis*) and Sanford's arrowhead (*Sagittaria sanfordii*), both of which have a California Rare Plant Rank of 1B ("rare, threatened, or endangered in California"). The alkaline soils in grassland habitat at Pumping Plants No. 2 and No. 3 provide marginal habitat for several species with a California Rare Plant Rank of 1B: Ferris' milk-vetch (*Astragalus tener* var. *ferrisiae*), heartscale (*Atriplex cordulata* var. *cordulata*), recurved larkspur (*Delphinium recurvatum*),

San Joaquin spearscale (*Extriplex joaquinana*), Heckard's pepper-grass (*Lepidium latipes* var. *heckardii*), and California alkali grass (*Puccinellia simplex*). Recurved larkspur, Heckard's pepper-grass, and California alkali grass were not observed during the biological survey conducted during the evident and identifiable period. These species are not expected to occur in the study area. The survey was conducted outside the evident and identifiable period of Ferris' milk-vetch, heartscale, San Joaquin spearscale, woolly rose-mallow, and Sanford's arrowhead. These species could potentially be present in the study area and not have been detected.

The perennial riverine habitat within the study area provides aquatic habitat for the State and federally threatened giant garter snake (*Thamnophis gigas*) (GGS). The grassland and ruderal habitats within the study area also represent upland habitat suitable for GGS that is within 200 feet of the perennial riverine habitat.

A single tree at Pumping Plant No. 3 provides marginal nesting habitat for the State-threatened Swainson's hawk due to its small size and location next to areas frequently disturbed by human activity. Swainson's hawk has low potential to nest in the study area, but has moderate potential to nest close by in riparian vegetation along the Sutter Bypass where project activities could affect nesting.

The study area may provide habitat for other special-status wildlife: pallid bat (*Antrozous pallidus*), western pond turtle (*Emys marmorata*), burrowing owl (*Athene cunicularia*), white-tailed kite (*Elanus leucurus*), song sparrow "Modesto" population (*Melospiza melodia*), and other birds of prey and migratory birds. A colony of an unidentified species of bat was observed in the abandoned control building at Pumping Plant No. 1 during the field review conducted on October 18, 2018. This bat colony was not observed during the March 14, 2019 fieldwork. Western pond turtles were observed in the collecting canals just outside the work areas at Pumping Plant Nos 2 and 3. Active cliff swallow (*Petrochelidon pyrrhonota*) colonies were observed on the structures in the work area for each pumping plant. Habitat for burrowing owl in the study area is marginal due to very few burrows present.

No habitat for special-status fish species is present in the study area. The study area is outside the geographic range of federally threatened Delta Smelt (*Hypomesus transpacificus*), Sacramento Splittail (*Pogonichthys macrolepidotus*), and Eulachon (*Thaleichthys pacificus*), and federal candidate Longfin Smelt (*Spirinchus thaleichthys*). The collecting canals do not provide the cold-water stream habitat with gravel substrates required for federally threatened Central Valley Steelhead Distinct Population Segment (DPS) (*Oncorhynchus mykiss irideus* pop. 11) or Central Valley spring-run Chinook salmon Evolutionarily Significant Unit (ESU) (*Oncorhynchus tshawytscha* pop. 6).

This report presents recommended conservation measures for the above-listed species and for impacts to potential waters of the United States and State. The measures will be used to inform the California Environmental Quality Act (CEQA) initial study and biological assessment in determining the project's potential environmental impacts/effects on sensitive biological resources.

CHAPTER 1

Introduction

1.1 Background and Purpose

This biological resources survey report (report) was prepared for the approximately 3.31-acre study area for the Sutter Bypass Pumping Plant Rehabilitation Project (project or proposed project), located in Sutter County, California. The purpose of this report is to assess the suitability of the study area to support special-status species and other sensitive biological resources; recommend regulatory permitting or further analysis that may be required; and recommend conservation measures to avoid or minimize potential impacts on special-status species and other sensitive biological resources.

1.2 Project Description

The proposed project consists of retrofitting maintenance structures at three separate pumping plants along the East Levee of the Sutter Bypass, in Sutter County, California. These plants, originally built and operated by the California Department of Water Resources (DWR) since 1924 in accordance with Water Code Section 8361, convey drainage from Yuba City and surrounding lands into the Sutter Bypass. In 1936, DWR constructed new pumping plants adjacent to the original pumping plants, which have been abandoned and are used only for their gravity-draining function.

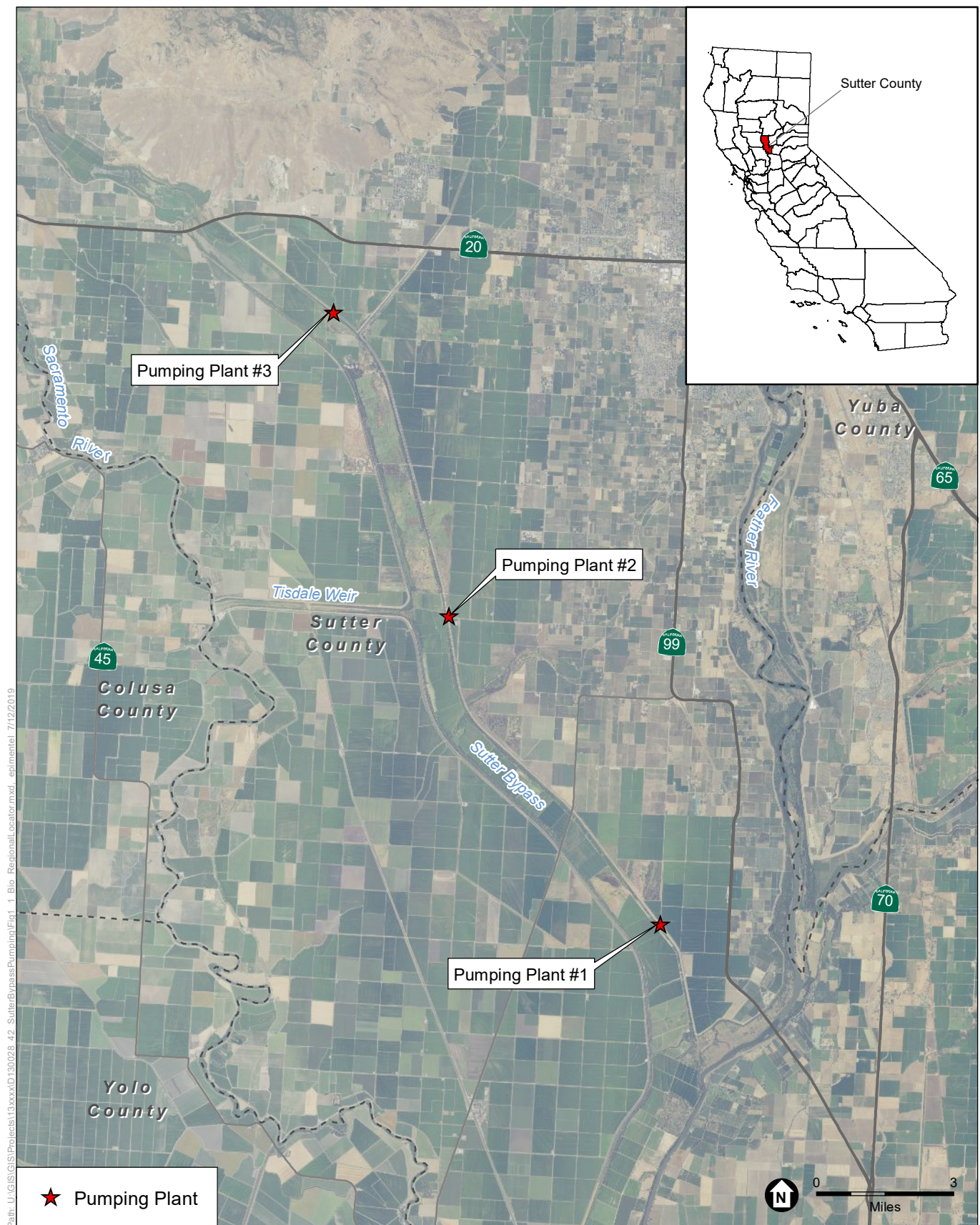
Construction work would occur in two phases: one phase focused on the gravity drain system at each pumping plant, and the other focused on the pumping plants' intake basins. Project elements include:

- Demolition of control buildings at Pumping Plants No. 1 and No. 2
- Extension of gravity pipes and installation of trash racks and weir/stop log structures
- Reconstruction of the levee and partial filling of the old sump basin at Pumping Plant No. 3

Project construction would occur over 2 construction seasons, each beginning no earlier than May 1 and ending before October 2.

1.3 Project Location

The three pumping plants are located along the east (land) side of the East Levee of the Sutter Bypass in unincorporated Sutter County, California (**Figure 1-1**). Pumping Plant No. 1, 2, and 3



SOURCE: NAIP, 2016; ESRI, 2012; ESA, 2019

Sutter Bypass Pumping Plant Rehabilitation Project

Figure 1-1
Regional Location

are located approximately 8.8 miles west, 9.8 miles southwest, and 14.3 miles south-southwest of Yuba City, respectively. The locations of the project's work areas are:

- *Pumping Plant No. 1*: Township 13 North, Range 3 East, Sections 33 and 34 of the Sutter Causeway U.S. Geological Survey 7.5-minute series quadrangle (quad)
- *Pumping Plant No. 2*: Township 14 North, Range 2 East, Section 26 of the Gilsizer Slough quad
- *Pumping Plant No. 3*: Township 15 North, Range 2 East, Section 29 of the Tisdale Weir quad

The pumping plants are situated at the base of landward side of the levee. Topography at each pumping plant work area is generally flat, with access roads sloping down from the levee crown. Elevations range from 28 feet to 45 feet above mean sea level at Pumping Plant No. 1, 30 feet to 51 feet above mean sea level at Pumping Plant No. 2, and 37 feet to 57 feet above mean sea level at Pumping Plant No. 3.

The study area includes staging areas, gravel access roads, the abandoned control buildings at Pumping Plant No. 1 and 2, segments of the collecting canals, and the sump basin and adjacent levee prism at Pumping Plant No. 3 (**Figures 1-2, 1-3, and 1-4**).

1.4 Regulatory Context

Biological resources in the study area may be subject to federal, State, and local regulations, and fall under the jurisdiction of various regulatory agencies. This section summarizes the federal and State regulations that protect special-status species; waters of the United States and State; natural communities of special concern; and other sensitive biological resources.

In general, the greatest legal protections are provided for plant and wildlife species that are formally listed under the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA). The agencies and regulations listed in **Table 1-1** are commonly associated with projects that have the potential to affect biological resources. These regulations are presented and discussed in full in **Appendix A, Regulatory Context**.

**TABLE 1-1
REGULATORY AGENCIES**

Agency	Regulation
Federal	
U.S. Fish and Wildlife Service	<ul style="list-style-type: none"> • Federal Endangered Species Act • Migratory Bird Treaty Act • Bald and Golden Eagle Protection Act
National Marine Fisheries Service	<ul style="list-style-type: none"> • Federal Endangered Species Act • Magnuson-Stevens Fishery Conservation and Management Act
U.S. Army Corps of Engineers	Clean Water Act, Section 404
State	
California Department of Fish and Wildlife	<ul style="list-style-type: none"> • California Endangered Species Act • Fish and Game Code Sections 3503, 3511, and 2080 • Native Plant Protection Act • Fish and Game Code Section 1600 Lake or Streambed Alteration Program
Central Valley Regional Water Quality Control Board	Clean Water Act, Section 401 Water Quality Certification
State Water Resources Control Board	Porter-Cologne Water Quality Control Act



SOURCE: USDA, 2016; DWR, 2019; ESA, 2019

Sutter Bypass Pumping Plant Rehabilitation Project

Figure 1-2
Study Area
Pumping Plant No.1



SOURCE: USDA, 2016; DWR, 2019; ESA, 2019

Sutter Bypass Pumping Plant Rehabilitation Project

Figure 1-3
Study Area
Pumping Plant No.2



SOURCE: USDA, 2016; DWR, 2019; ESA, 2019

Sutter Bypass Pumping Plant Rehabilitation Project

Figure 1-4
Study Area
Pumping Plant No.3

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CHAPTER 2

Methods

2.1 Study Area Definition

Use of the term “study area” in this report refers to the work areas for all three pumping plant sites (Figures 1-2, 1-3, and 1-4). Where a discussion is specific to an individual pumping plant’s work area, this is noted in the text.

2.2 Survey Methodology

2.2.1 Survey Dates and Surveying Personnel

Environmental Science Associates (ESA) Project Manager Jon Waggoner, Senior Biologist Jessica Orsolini, and Biologist Laura Dodson attended a field review with DWR staff on October 18, 2018. Jessica Orsolini and ESA Senior Biologist Kelly Bayne conducted a biological survey and an aquatic resources delineation of the study area on March 14, 2019. The entire survey area was accessible by foot.

During the October 2018 site visit, the chain-link fences around the abandoned control buildings were opened so that the interiors of the structures could be examined closely. During the March 2019 fieldwork, the chain-link fence around the abandoned structure at Pumping Plant No. 1 was locked, but the interior could be viewed through the fence with binoculars. The fence around the abandoned structure at Pumping Plant No. 2 was open and the structure was accessible for inspection.

The results of the aquatic resources delineation are provided herein and are discussed in detail under separate cover (ESA, 2019a).

2.2.2 Biological Survey

The biological survey consisted of walking through the study area to evaluate vegetative communities, record plant and wildlife species observed, map the boundaries of aquatic resources, and document habitat for special-status species with the potential to occur in the study area. Because of the small size of the study area, the survey achieved full visual coverage in all areas of natural vegetation; as a result, any special-status plants present and identifiable at the time of the survey would have been located.

Habitat types and aquatic resources were characterized and mapped by hand in the field using an aerial field map. The boundaries of habitat types were compared with those previously mapped

for the DWR Collecting Canal Maintenance of Project No. 6 (c) (HTH, 2015) and adjusted where necessary. The ordinary high-water mark of the perennial riverine habitat in the study area was based on mapping conducted for the Collecting Canals Sediment Removal Project (ESA, 2019b).

The wetland delineation used the “Routine Determination Method” as described in the 1987 *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987), hereafter called the “1987 Manual.” The 1987 Manual was used in conjunction with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (USACE, 2008), hereafter called the “Arid West Supplement.” For areas where the 1987 Manual and the Arid West Supplement differ, the Arid West Supplement was followed. Presence or absence of positive indicators for wetland vegetation, soils, and hydrology was assessed using the 1987 Manual and Arid West Supplement guidelines. The delineation has not yet been verified by the U.S. Army Corps of Engineers.

2.3 Review of Background Information

Biological surveys and evaluations of biological resources were previously conducted in the study area and the surrounding environs for the following prior projects: Collecting Canal Maintenance Project, Collecting Canals Sediment Removal Project, and Environmental Permitting for Operations and Maintenance Project. Information regarding biological resources that was developed for these projects was considered during preparation of this report, where applicable. However, given the broader study areas of those projects, the preparation of this report focused on updated biological resource data queries and the information gathered during the site visit and biological survey conducted in October 2018 and March 2019.

Before performing the biological survey, ESA reviewed publicly available data and subscription-based biological resource data. The following data sources were consulted for this analysis:

- Topographic maps (Sutter Causeway, Gilsizer Slough, and Tisdale Weir quads) (USGS, 2018a, 2018b, 2018c)
- Online soil maps from the U.S. Department of Agriculture’s National Resources Conservation Service (NRCS, 2019a)
- The California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB) list of plant and wildlife species documented on the project quads and eight surrounding quads (CDFW, 2019a, 2019b, 2019c)
- The California Native Plant Society (CNPS) online database of plant species documented on the project quads and eight surrounding quads (CNPS, 2019)
- A U.S. Fish and Wildlife Service (USFWS) list of species that may occur in the vicinity of the study area (USFWS, 2019a, 2019b, 2019c)

The USFWS, CDFW, and CNPS lists are presented in **Appendix B**. The CNDDDB and CNPS lists include the special-status species documented on the following quads:

- *Pumping Plant No. 1*: Tisdale Weir, Gilsizer Slough, Olivehurst, Kirkville, Sutter Causeway, Nicolaus, Eldorado Bend, Knights Landing, and Verona

- *Pumping Plant No. 2*: Sutter Buttes, Sutter, Yuba City, Tisdale Weir, Gilsizer Slough, Olivehurst, Kirkville, Sutter Causeway, and Nicolaus
- *Pumping Plant No. 3*: Meridian, Sutter Buttes, Sutter, Grimes, Tisdale Weir, Gilsizer Slough, Dunnigan, Kirkville, and Sutter Causeway

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CHAPTER 3

Environmental Setting

This chapter provides the environmental baseline for soil types, habitat types, waters of the United States, and special-status species potentially present in the study area.

3.1 Soil Types

The Natural Resources Conservation Service (NRCS) of the U.S. Department of Agriculture has mapped one soil unit in each pumping plant's work area (**Figures 3-1, 3-2, and 3-3**). General characteristics associated with these soil types are described below (NRCS, 2019a).

3.1.1 Pumping Plant No. 1: Yuvas Loam, 0 to 2 Percent Slopes

This soil unit (NRCS map unit 175) occurs on terraces and basin rims with parent material consisting of clayey alluvium derived from mixed sources. This is a moderately deep, moderately well-drained soil with very low available water storage, about 2.4 inches. The typical profile is comprised of loam from 0 to 16 inches, clay from 16 to 24 inches, indurated duripan from 24 to 38 inches, and weathered bedrock from 38 to 42 inches. Yuvas loam, and its component Oswald found on floodplains, are identified as hydric soils in Sutter County (NRCS, 2019a, 2019b).

3.1.2 Pumping Plant No. 2: Subaco Clay, 0 to 2 Percent Slopes

This soil unit (NRCS map unit 173) occurs on basin floors with parent material consisting of clayey alluvium derived from mixed sources. This is a poorly drained soil with low available water storage, about 3.9 inches. The typical profile is comprised of clay from 0 to 26 inches and unweathered bedrock from 26 to 30 inches. Subaco clay, and its components Capay, Clear Lake, and Oswald found on basin floors, are identified as hydric soils in Sutter County (NRCS, 2019a, 2019b).

3.1.3 Pumping Plant No. 3: Oswald Clay, 0 to 2 Percent Slopes

This soil unit (NRCS map unit 153) occurs on basin floors with parent material consisting of clayey alluvium derived from mixed sources. This is a poorly drained soil with low available water storage, about 5.3 inches. The typical profile is comprised of clay from 0 to 33 inches and weathered bedrock from 33 to 37 inches. Oswald clay is identified as a hydric soil in Sutter County. None of its component soils are identified as hydric (NRCS, 2019a, 2019b).

3.2 Habitat Types

Descriptions of habitat types present in the study area are based on field observations and are included below. The following habitat types are present in the work areas at all three pumping plants: ruderal, annual grassland, developed, and perennial riverine. Additionally, Himalayan blackberry brambles occur at Pumping Plant No. 2 and inlet basin occurs at Pumping Plant No. 1 and 2. **Table 3-1** summarizes the acreage of habitat types at the respective pumping plants. **Figures 3-4, 3-5, and 3-6** show the habitat types in the study area. **Appendix C** and **Appendix D**, respectively, present complete lists of plant and wildlife species identified during the survey conducted for the proposed project. **Appendix E** shows representative photographs of the study area.

TABLE 3-1
ACREAGES OF HABITAT TYPES IN THE STUDY AREA

Habitat Type	Pumping Plant No. 1 Acreage ¹	Pumping Plant No. 2 Acreage ¹	Pumping Plant No. 3 Acreage ¹
Annual grassland	0.06	0.08	0.12
Perennial riverine ²	0.07	0.18	0.25
Inlet basin ²	0.05	0.17	0.00
Ruderal	0.06	0.28	0.33
Developed	0.55	0.79	0.31
Himalayan blackberry brambles	0.00	0.01	0.00
Total	0.79	1.51	1.01

NOTES:

1 GIS calculations may not reflect the exact acreage of the study area due to rounding.

2 Potentially jurisdictional waters of the United States.



SOURCE: USDA, 2016; SSURGO, 2016; DWR, 2019; ESA, 2019

Sutter Bypass Pumping Plant Rehabilitation Project

Figure 3-1
Soils Map
Pumping Plant No.1



SOURCE: USDA, 2016; SSURGO, 2016; DWR, 2019; ESA, 2019

Sutter Bypass Pumping Plant Rehabilitation Project

Figure 3-2
Soils Map
Pumping Plant No.2



SOURCE: USDA, 2016; SSURGO, 2016; DWR, 2019; ESA, 2019

Sutter Bypass Pumping Plant Rehabilitation Project

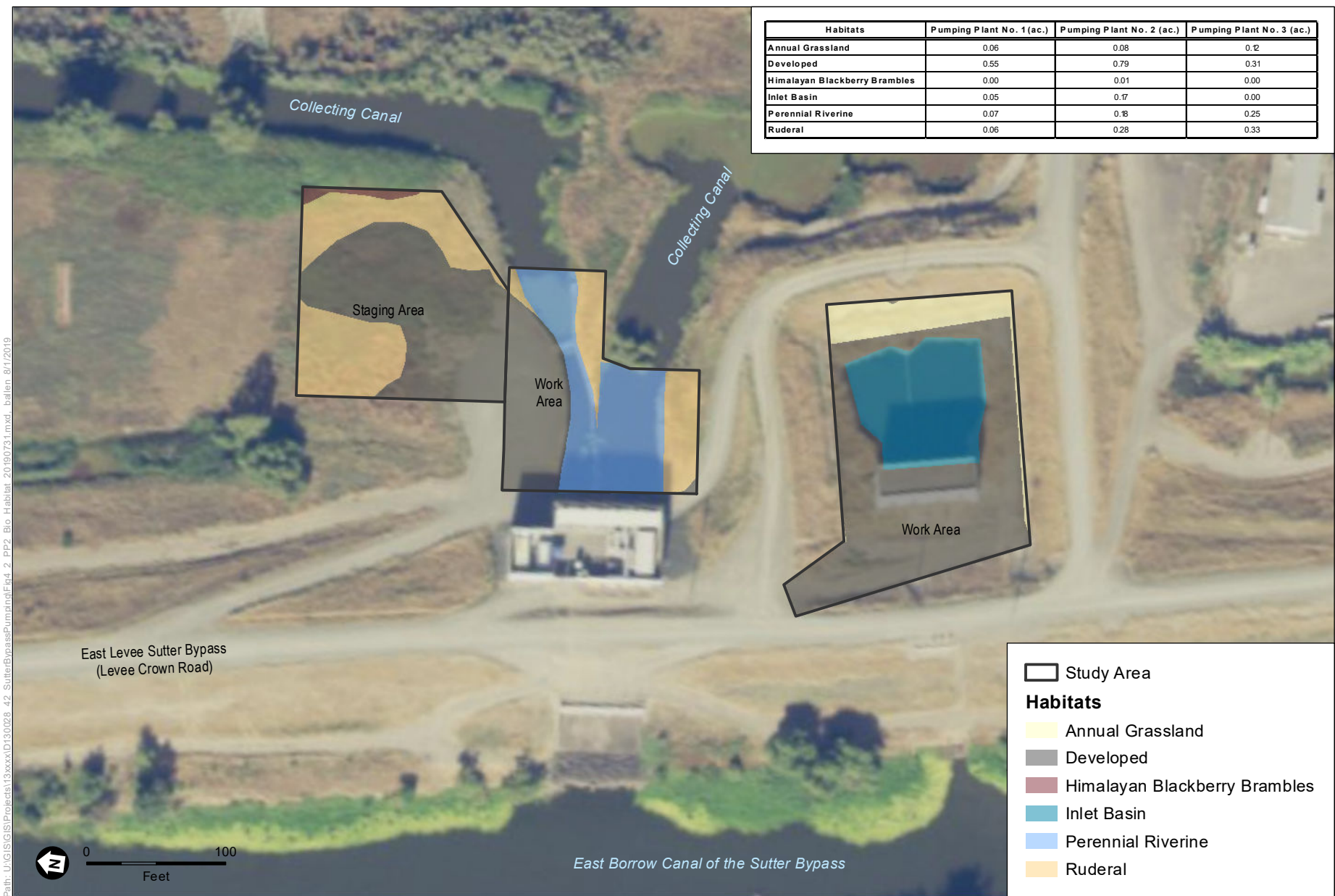
Figure 3-3
Soils Map
Pumping Plant No.3



SOURCE: USDA, 2016; DWR, 2019; HT Harvey, 2015; ESA, 2019

Sutter Bypass Pumping Plant Rehabilitation Project

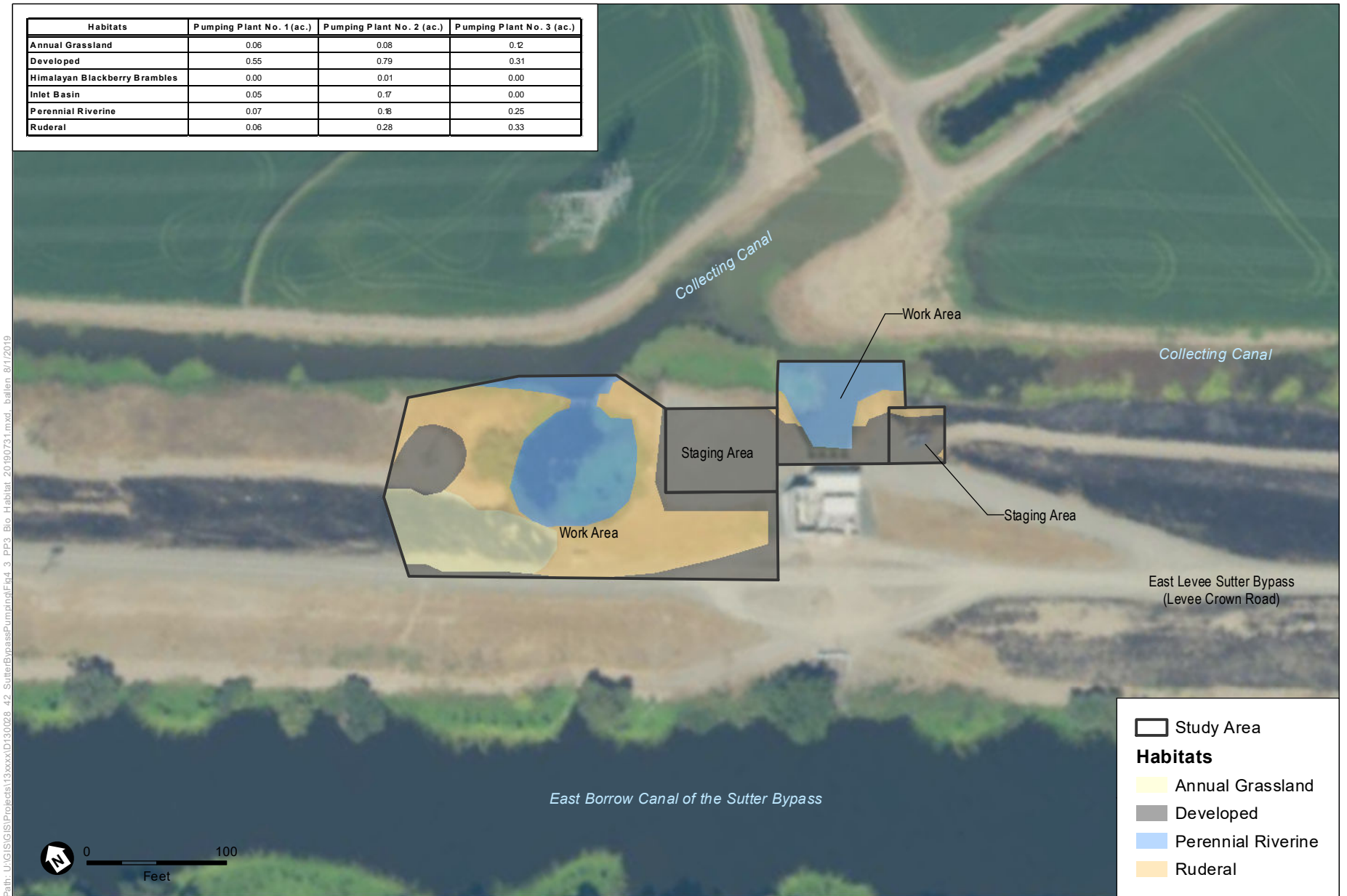
Figure 3-4
Habitat Types
Pumping Plant No.1



SOURCE: USDA, 2016; DWR, 2019; HT Harvey, 2015; ESA, 2019

Sutter Bypass Pumping Plant Rehabilitation Project

Figure 3-5
Habitat Types
Pumping Plant No.2



SOURCE: USDA, 2016; DWR, 2019; HT Harvey, 2015; ESA, 2019

Sutter Bypass Pumping Plant Rehabilitation Project

Figure 3-6
Habitat Types
Pumping Plant No.3 Site Plan

3.2.1 Annual Grassland

Annual grassland occurs primarily on the levee slopes and in undeveloped areas around the pumping plants. The habitat is subject to regular maintenance and disturbance, including mowing and burning. During the 2018 site visit, this community had recently burned at Pumping Plant No. 1 and 2, and most of the vegetation was blackened. Vegetation had reestablished by the time of the March 2019 fieldwork. Dominant vegetation includes wild oats (*Avena* spp.), rye grass (*Festuca perennis*), prickly lettuce (*Lactuca serriola*), field mustard (*Brassica rapa*), and other ruderal species.

3.2.2 Perennial Riverine

Perennial riverine habitat exists within the collecting canals on the east side of the pumping plants. This habitat type includes what was previously the inlet basin at Pumping Plant No. 3 where the control building was removed. After the control building was removed, the edges of the basin eroded, forming a sump that is directly connected to the adjacent collecting canal, effectively making it part of the collecting canal. The foundation of the old control building is still present within the sump.

No riparian or emergent vegetation associated with the canals or sump is present in the study area. A single black walnut is located on the north side of the sump basin at Pumping Plant No. 3 and does not constitute a riparian community. Riparian communities are made up of a unique and diverse assemblage of plant species which are influenced by flooding and water flow. Riparian communities provide many functions and values, including wildlife movement corridors; food, cover, and water for a diversity of animals; stream shading; nutrient cycling; ground water regeneration; bank stabilization; and reduction of downstream flooding. The single tree is not part of a larger riparian community and does not provide the functions and values of a riparian community (NRCS, 2019c). Depending on the time of year, floating aquatic vegetation including mosquito fern (*Azolla filiculoides*) and water primrose (*Ludwigia* sp.) cover or partially cover the water surface. Water in the canals is regulated for agricultural needs and is controlled through the use of pumps and gravity drains. Water is either pumped from or drained to the Sutter Bypass, depending on the needs of adjacent agricultural fields.

3.2.3 Inlet Basin

The study area has two inlet basins, one at Pumping Plant No. 1 and one at Pumping Plant No. 2. The inlet basins are concrete-lined features associated with the gravity drain system at the abandoned control buildings. The inlet basins are hydrologically connected to the collecting canals and Sutter Bypass through pipes under the levee and access roads. Water flows through pipes from the collecting canals to the inlet basins, and exits through gravity drains into the Sutter Bypass. Screw gates at the pipes that connect the basins to the collecting canals can be closed to cut off water flow. There is no riparian or emergent vegetation associated with the inlet basins.

3.2.4 Ruderal

Ruderal vegetation is present in the work areas at all three pumping plants. This habitat occurs in areas of frequent disturbance and is subject to regular maintenance, including mowing and

burning. During the 2018 site visit, this community had recently burned at Pumping Plant No. 1 and 2, and most of the vegetation was blackened. Vegetation had reestablished by the time of the 2019 fieldwork. Dominant vegetation includes cranesbill (*Geranium dissectum*), storksbill (*Erodium botrys*), yellow star-thistle (*Centaurea solstitialis*), field mustard (*Brassica rapa*), California burclover (*Medicago polymorpha*), and milk thistle (*Silybum marianum*). A single Northern California black walnut (*Juglans hindsii*) occurs in this community at Pumping Plant No. 3 on the north side of the sump basin. This is the only tree in the study area.

3.2.5 Developed

Developed habitat in the study area consists of the gravel access roads, toe roads, and parking areas around the pumping plants; the abandoned control buildings; and the gravel levee crown road. These areas are largely devoid of vegetation, but where present, vegetation consists of weedy, ruderal species.

3.2.6 Himalayan Blackberry Brambles

A small Himalayan blackberry bramble is present at the eastern edge of the proposed staging area at Pumping Plant No. 2. This habitat type is dominated by nonnative, invasive Himalayan blackberry (*Rubus armeniacus*) and occurs along the bank of the collecting canal.

3.3 Wetlands and Other Waters of the United States and State

Wetlands are ecologically complex habitats that support a variety of both plant and animal life. The federal government defines wetlands in Section 404 of the Clean Water Act (CWA) as “areas that are inundated or saturated by surface or ground water 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 Code of Federal Regulations [CFR] 328.3[b] and 40 CFR 230.3). Under normal circumstances, the federal definition of wetlands requires that three wetland identification parameters be present: wetland hydrology, hydric soils, and hydrophytic vegetation. Examples of wetlands include freshwater emergent wetlands, seasonal wetlands, and wet meadows that have a hydrologic link to other waters of the United States (see definition of “other waters of the United States” below).

“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 and an ordinary high-water mark. Examples of other waters of the United States include rivers, creeks, intermittent and ephemeral channels, ponds, and lakes.

There are no wetlands in the study area. However, the perennial riverine features and inlet basins are potentially jurisdictional waters of the United States. These areas are depicted on the habitat maps (Figures 3-4, 3-5, and 3-6). Based on the aquatic resources delineation, the study area includes 0.50 acre of perennial riverine habitat (0.07 acre at Pumping Plant No. 1, 0.18 acre at Pumping Plant No. 2, and 0.25 acre at Pumping Plant No. 3) and 0.22 acres of inlet basin (0.05 acre at Pumping Plant No. 1 and 0.17 acre at Pumping Plant No. 2) (ESA, 2019a). All

conclusions presented should be considered preliminary and subject to change pending official review and verification in writing by the U.S. Army Corps of Engineers.

On April 2, 2019, the State Water Resources Control Board (SWRCB) adopted a new statewide wetland definition and procedures for discharges of dredged and fill material to waters of the State. These procedures will not become law until 9 months after approval by the Office of Administrative Law; however, the aquatic resources in the study area meet both the current and new definition of waters of the State.

3.4 Special-Status Species

Special-status species are legally protected under the Federal and California Endangered Species Acts or other regulations or are species that are considered sufficiently rare by the scientific community to qualify for such listing. These species are classified into the following categories:

1. Species listed or proposed for listing as threatened or endangered under the FESA (50 CFR 17.12 [listed plants], 50 CFR 17.11 [listed animals], and various notices in the *Federal Register* [FR] [proposed species])
2. Species that are candidates for possible future listing as threatened or endangered under the FESA (61 FR 40, February 28, 1996)
3. Species listed or proposed for listing by the State of California as threatened or endangered under the CESA (California Code of Regulations, Title 14, Section 670.5)
4. Plants listed as rare or endangered under the California Native Plant Protection Act (Fish and Game Code, Section 1900 et seq.)
5. Animal species of special concern to CDFW
6. Animals fully protected under Fish and Game Code (Fish and Game Code, Section 3511 [birds], Section 4700 [mammals], and Section 5050 [reptiles and amphibians])
7. Species that meet the definitions of rare and endangered under the California Environmental Quality Act (CEQA); a plant or animal species may be treated as “rare or endangered” even if not on one of the official lists (State CEQA Guidelines, Section 15380)
8. Plants considered by CDFW and CNPS to be “rare, threatened, or endangered in California” (California Rare Plant Ranks [CRPRs] 1A, 1B, and 2)

Species recognized under these terms are collectively referred to as “special-status species.”

Special-status species considered for this analysis are based on the CNDDDB, CNPS, and USFWS lists. Appendix B presents a comprehensive list of special-status plant and wildlife species that were considered in the analysis. The list includes the common and scientific names for each species, their regulatory status (federal, State, local, CRPR), habitat requirements, and a discussion of the potential for occurrence in the study area. Species that are not expected to occur in the study area (Appendix B) are excluded from the discussion below.

3.4.1 Federally Listed Plants

No federally listed plant species are expected to occur in the study area.

3.4.2 Special-Status Plants

All of the special-status plant species described below are CRPR 1B species.

Ferris' Milk-Vetch

Ferris' milk-vetch (*Astragalus tener* var. *ferrisiae*) is an annual herb found in vernal mesic meadows and seeps, and subalkaline flats in valley and foothill grasslands, typically on adobe soil, from 7 to 250 feet (2–75 meters). The blooming period is April through May (CNPS, 2019). The alkaline soils in the grassland habitat at Pumping Plant Nos. 2 and 3 provide limited habitat for this species because they are frequently disturbed.

Ferris' milk-vetch was not observed during the biological survey. Because the biological survey was conducted outside of the evident and identifiable period for Ferris' milk-vetch, this species could potentially be present in the study area and not have been detected. This species is considered to have low potential to occur in the study area.

Heartscale

Heartscale (*Atriplex cordulata* var. *cordulata*) is an annual herb found in saline or alkaline soils of chenopod scrub, meadows and seeps, and sandy valley and footprint grasslands. This species occurs at elevations from 0 to 1,840 feet (0–560 meters). The blooming period is April through October (CNPS, 2019). The alkaline soils in grassland habitat at Pumping Plant Nos. 2 and 3 provide limited habitat for this species because they are frequently disturbed.

Heartscale was not observed during the biological survey. Because the biological survey was conducted outside the evident and identifiable period for heartscale, this species could potentially be present in the study area and not have been detected. This species is considered to have low potential to occur in the study area.

Recurved Larkspur

Recurved larkspur (*Delphinium recurvatum*) is a perennial herb found in alkaline soils of chenopod scrub, cismontane woodland, and valley and foothill grassland from 10 to 2,600 feet (3–790 meters). The blooming period is March through June (CNPS, 2019). The alkaline soils in grassland habitat at Pumping Plant Nos. 2 and 3 provide limited habitat for this species because they are frequently disturbed.

Although the grassland in the study area provides habitat for recurved larkspur, this species was not observed during the March 2019 biological survey conducted during the evident and identifiable period of this species. This species is not expected to occur in the study area.

San Joaquin Spearscale

San Joaquin spearscale (*Extriplex joaquinana*) is an annual herb found in alkaline soils of chenopod scrub, meadows and seeps, playas, and valley and foothill grassland habitats. The elevation range of this species is from 3 to 2,740 feet (1–835 meters). The blooming period is April through October (CNPS, 2019). The alkaline soils in grassland habitat at Pumping Plant Nos. 2 and 3 provide limited habitat for this species because they are frequently disturbed.

San Joaquin spearscale was not observed during the biological survey. Because the biological survey was conducted outside the evident and identifiable period for San Joaquin spearscale, the species could potentially be present in the study area and not have been detected. This species is considered to have moderate potential to occur in the study area.

Woolly Rose-Mallow

Woolly rose-mallow (*Hibiscus lasiocarpus* var. *occidentalis*) is an emergent perennial rhizomatous herb often found in riprap on the sides of levees and in marshes and swamps at elevations from 0 to 390 feet (0–120 meters). The blooming period is June through September (CNPS, 2019). Suitable habitat for this plant is present along drainages at all pumping plant sites.

Occurrence records in the CNDDDB overlap the study area at Pumping Plant No. 1, and occur in the Sutter Bypass adjacent to Pumping Plant No. 2 (CDFW, 2019d). The occurrences at Pumping Plant No. 1 and Pumping Plant No. 2 are based on data from 1984 and 1988, respectively. Woolly rose-mallow was not observed during the biological survey. Because the biological survey was conducted outside of the evident and identifiable period for woolly rose-mallow, this species could potentially be present in the study area and not have been detected. This species is considered to have high potential to occur in the study area.

Heckard's Pepper-Grass

Heckard's pepper-grass (*Lepidium latipes* var. *heckardii*) is an annual herb found in alkaline flats of valley and foothill grasslands at elevations from 6 to 660 feet (2–200 meters). Specific areas typically occupied by this species include alkaline soils, vernal pool margins, and the edges of salt marshes. The blooming period is March through May (CNPS, 2019). The alkaline soils in grassland habitat at Pumping Plants No. 2 and No. 3 provide limited habitat for this species because they are frequently disturbed.

Although the grassland in the study area provides habitat for Heckard's pepper-grass, this species was not observed during the March 2019 biological survey conducted during the evident and identifiable period of this species. This species is not expected to occur in the study area.

California Alkali Grass

California alkali grass (*Puccinellia simplex*) is an annual herb found in alkaline, vernal mesic sinks, flats, and lake margins in chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools at elevations from 5 to 3,050 feet (2–930 meters). The blooming period is March through May (CNPS, 2019). The alkaline soils in grassland habitat at Pumping

Plants No. 2 and No. 3 provide limited habitat for this species because they are frequently disturbed.

Although the grassland in the study area provides habitat for California alkali grass, this species was not observed during the March 2019 biological survey conducted during the evident and identifiable period of this species. This species is not expected to occur in the study area.

Sanford's Arrowhead

Sanford's arrowhead (*Sagittaria sanfordii*) is an emergent perennial rhizomatous herb found in assorted shallow, slow-moving freshwater marshes and swamps, ponds, and ditches at elevations from 0 to 2,130 feet (0–650 meters). The blooming period is May through October, and sometimes November (CNPS, 2019). Suitable habitat is present in the sump basin at Pumping Plant No. 3 and in the collecting canals throughout the study area.

Sanford's arrowhead was not observed during the biological survey. Because the biological survey was conducted outside the evident and identifiable period for Sanford's arrowhead, the species could potentially be present in the study area and not have been detected. This species has moderate potential to occur in the study area.

3.4.3 Federally Listed Wildlife

Giant Garter Snake

California designated the giant garter snake (*Thamnophis gigas*) (GGS) as threatened on June 27, 1971 under CESA (CDFW, 2018). The species was federally listed as threatened by USFWS on October 20, 1993 (USFWS, 1993). USFWS published a recovery plan for the GGS in September 2017 (USFWS, 2017). Critical habitat has not been designated for the species under the Endangered Species Act (USFWS, 2017).

The GGS is endemic to the wetlands of the Sacramento and San Joaquin Valley floors, inhabiting marshes, sloughs, canals, ponds, small lakes, and low-gradient streams (USFWS, 2012). In areas where these naturally occurring wetlands have been converted to agriculture, GGS occur in association with rice cultivation and water supply canals that approximate the aquatic habitat functions of the species' native wetland habitats (Hansen, 1988; Wylie et al., 1997, 2005; Halstead et al., 2010). Annual activity varies with seasonal weather conditions; however, GGS generally spend the cool winter months (November through mid-March) in dormancy or in periods of reduced activity (i.e., brumation) in adjacent uplands, and they are active in aquatic habitats and adjacent uplands from April through October (Hansen and Brode, 1993; Wylie et al., 1997).

Suitable wetlands must contain water adequate to provide food and cover during the snake's active season; emergent, herbaceous wetland vegetation, such as tule, which provides escape cover and foraging habitat during the active season; and grassy banks and openings in waterside vegetation for basking. GGS are frequently absent from wetland habitats supporting substantial populations of predatory game fish; from streams with sand, gravel, or rock substrates; and from riparian woodlands (Hansen and Brode, 1980).

Although strongly associated with aquatic habitats, GGS also make extensive use of adjacent uplands, primarily for brumation but also for thermoregulation, to escape from predators, and to meet other life history needs during their active period (Halstead et al., 2015). Suitable uplands must be located above the elevation of prevailing winter flooding and contain small-mammal burrows, soil crevices, or similar features (USFWS, 2006). In addition, uplands must be located close to aquatic habitat used during the GGS's active season. The vast majority of GGS are found using uplands within 100 feet of suitable wetland habitat (Halstead et al., 2015). However, the snakes' distances from wetland habitat can vary substantially (Halstead et al., 2015), ranging from approximately 165 feet during the active season to more than 800 feet during the inactive season (Hansen, 1986; Wylie et al., 1997; USFWS, 1999). GGS may use levees that are close to rice fields, canals, or remnant wetland habitat because the levee slope may provide suitable upland habitat.

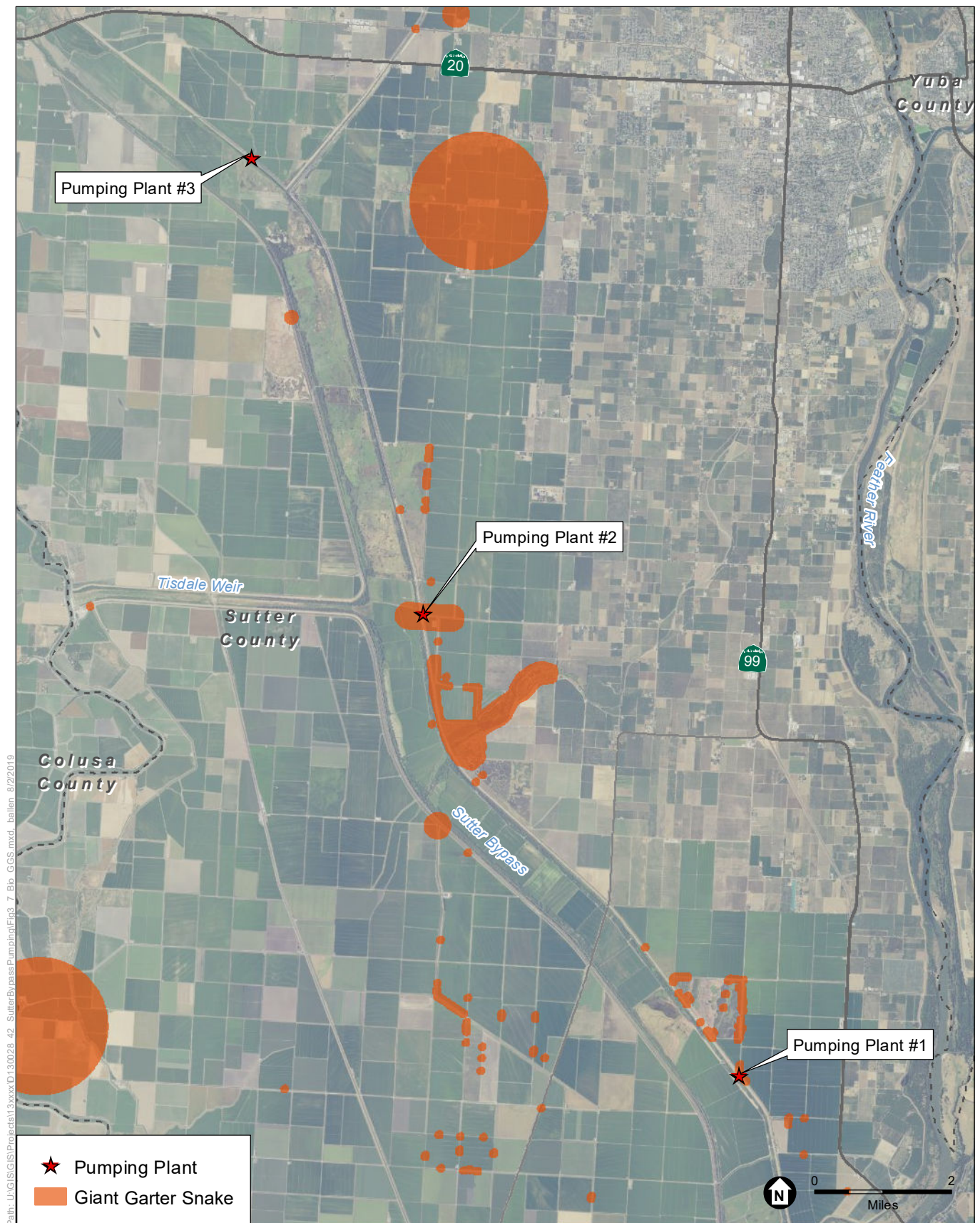
The primary threat to the GGS is the loss, degradation, and fragmentation of habitat, including the conversion of rice farmland to dryland crops and urban development. Conversion of Central Valley wetlands to agricultural and urban uses has already resulted in the loss of 95% of the historical habitat for this species (Wylie et al., 1997). With increasing water scarcity, farmers are more frequently favoring tree and row crops, which require less water than rice (USFWS, 2012).

Other factors that indirectly or secondarily affect the snake include groundwater pumping that reduces surface flows and water tables; diminishing water quality; introduced predators; nonnative aquatic plants that overtake wetlands and clog channels; and vegetation control on floodway facilities and canals that reduces cover and prey availability.

There are dozens of CNDDDB occurrences of this species within 5 miles of the study area (CDFW, 2019d) (**Figure 3-7**). Most of these occurrences are located within canals between rice fields or in managed marsh habitat, including the 429-acre Sutter Basin Conservation Bank located approximately 0.5 mile north of Pumping Plant No. 1 and the 380-acre Gilsizer Slough South GGS Conservation Bank located approximately 2 miles south of Pumping Plant No. 2. Additionally, occurrence records in the CNDDDB overlap the study area at Pumping Plant No. 1 and 2 (CDFW, 2019d) and along the collecting canals between the pumping plant work areas.

The occurrence identified in the CNDDDB which overlaps Pumping Plant No. 1 is from April 2011. The record is described in the CNDDDB as three adult GGS observed basking on a canal bank adjacent to a rice field and on the road, and one adult observed swimming in an agricultural canal.

The occurrence identified in the CNDDDB which overlaps Pumping Plant No. 2 is for observations of GGS made in 1995, 1996, 2005, 2011, and 2014. The record is described in the CNDDDB as one snake observed near the pumping plant in May 1995; an unknown number of snakes observed in the canal east of the pumping plant in 1996; two adult snakes observed in the canal east of the pumping plant in early 2005; a dead snake found on the road east of the pumping plant in November 2011; and 26 captured between May 11 and July 8, 2014. The exact location of the 2014 captures was not provided in the CNDDDB to protect owner privacy.



SOURCE: NAIP, 2016; CNDDDB, 2019; ESRI, 2012; ESA, 2019

Sutter Bypass Pumping Plant Rehabilitation Project

Figure 3-7
 CNDDDB Giant Garter Snake Occurrences in the Project Vicinity

Suitable aquatic habitat in the study area is present in the collecting canals at all three pumping plant sites, and in the sump basin at Pumping Plant No. 3. The inlet basins provide only marginal habitat because of their concrete substrate and lack of emergent vegetation. The banks of the collecting canals and adjacent grassland and ruderal habitat provide upland habitat for GGS. This species has high potential to occur in the study area.

3.4.4 Special-Status Wildlife

Western Pond Turtle

Western pond turtle (*Emys marmorata*) is a California species of special concern. This species is found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches with suitable basking sites (Californiaherps, 2018). Suitable aquatic habitat typically has a muddy or rocky bottom and has emergent aquatic vegetation for cover (Stebbins, 2003). Western pond turtles nest and overwinter in areas of sparse vegetation consisting of grassland and forbs with less than 10% slopes, less than 492 feet (150 meters) from aquatic habitat (Rosenberg et al., 2009).

The collecting canals at all three pumping plant sites and the sump basin at Pumping Plant No. 3 provide suitable aquatic habitat. The inlet basins provide only marginal habitat because of their concrete substrate and lack of emergent vegetation. The banks along the collecting canals and adjacent grassland and ruderal habitat provide upland habitat for western pond turtle. During the March 2019 fieldwork, western pond turtles were observed in the collecting canals just outside the work areas at Pumping Plant Nos. 2 and 3. This species has high potential to occur in the study area.

Burrowing Owl

Burrowing owl (*Athene cunicularia*) is a California species of special concern. This small ground-dwelling owl occurs in western North America from Canada to Mexico and east to Texas and Louisiana. Although burrowing owls are migratory in certain areas of their range, these owls are predominantly nonmigratory in California. Burrowing owls generally inhabit gently sloping areas characterized by low, sparse vegetation (Poulin et al., 2011). The breeding season for this species extends from March to August, peaking in April and May (CWHR, 2019). Burrowing owls nest in burrows in the ground, often in old ground squirrel burrows. They are also known to use artificial burrows including pipes, culverts, and nest boxes.

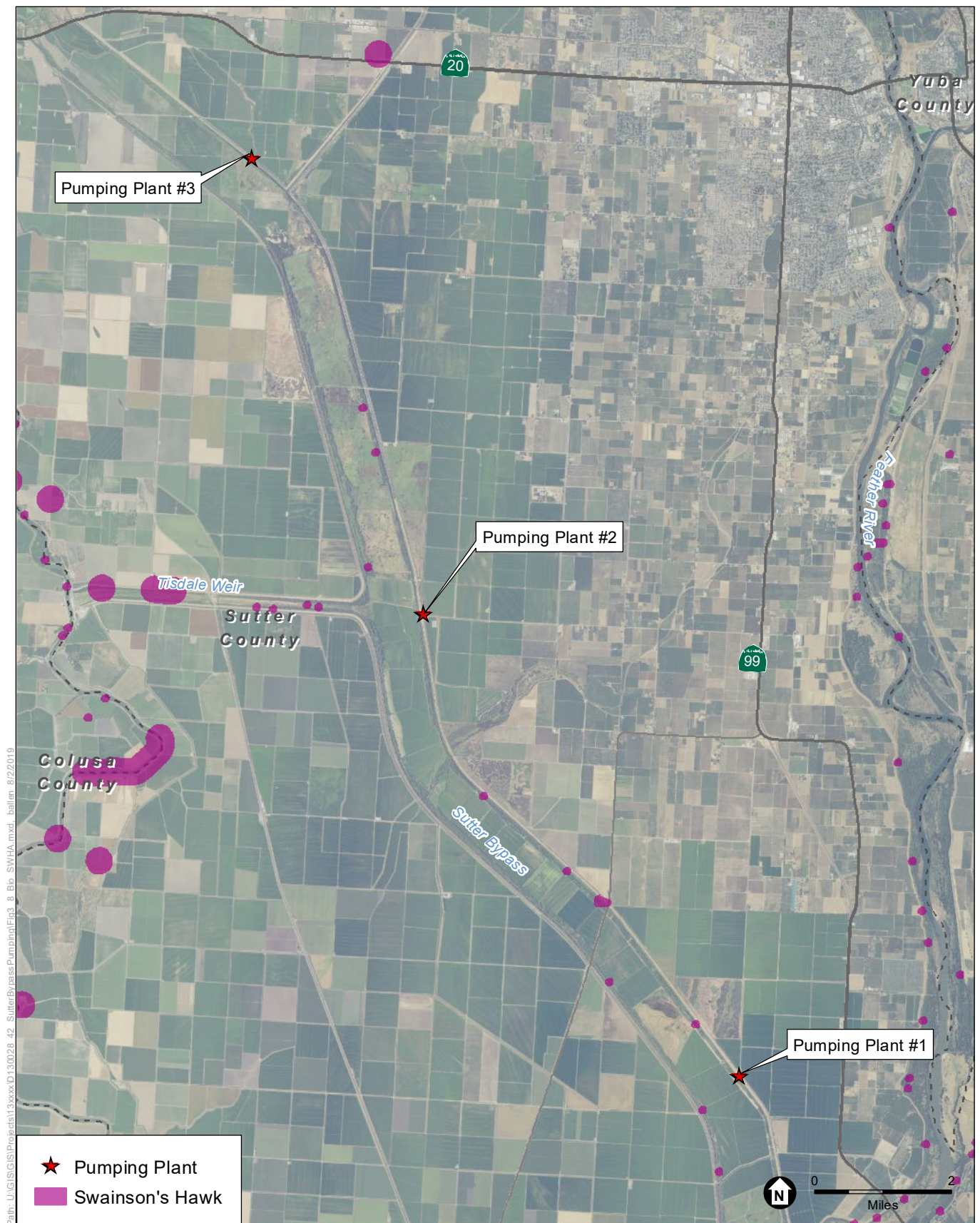
There are no CNDDDB records for burrowing owl in the study area or along the Sutter Bypass (CDFW, 2019d). The closest record is located approximately 13 miles southeast of Pumping Plant No. 1. Very few potential burrow sites that could be used by burrowing owl were observed in the study area during the biological survey, and no burrowing owls or their signs were observed. This species has low potential to occur in the study area. Grasslands adjacent to the study area where project activities could affect nesting also provide potential habitat for burrowing owl.

Swainson's Hawk

Swainson's hawk (*Buteo swainsoni*) is a State-listed threatened species that is a breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert. Migrating individuals move south through the southern and central interior of California in September and October, and north from March through May. Some individuals migrate as far as South America. Breeding occurs from late March to late August, peaking in late May through July (CWHR, 2019). In the Central Valley, Swainson's hawks nest in isolated trees, small groves, or large woodlands next to open grasslands or agricultural fields. This species typically nests near riparian areas; however, it has been known to nest in urban areas as well. Nest locations are usually close to suitable foraging habitats, which include fallow fields, annual grasslands, irrigated pastures, alfalfa and other hay crops, and low-growing row crops (Bloom and Van De Water, 1994).

There are dozens of CNDDDB occurrences of this species within 5 miles of the study area (CDFW, 2019d) (**Figure 3-8**). These occurrences are located primarily along the Sutter Bypass, Sacramento River, and Feather River. There are two Swainson's hawk records within a mile of Pumping Plant No. 1 – one is located along the west side of the Sutter Bypass and one is located along the east side. There are no Swainson's hawk records within 0.5 mile of Pumping Plant No. 1. There is 1 Swainson's hawk record located a mile from Pumping Plant No. 2 along the western side of the Sutter Bypass, and none closer. The density of Swainson's hawk records decreases along the north end of the Sutter Bypass, and none occur within a mile of Pumping Plant No. 3. The closest Swainson's hawk record to Pumping Plant No. 3 is located approximately 2.2 miles to the northeast along the Wadsworth Canal.

The only tree in the study area is the small black walnut located on the north side of the sump at Pumping Plant No. 3. This tree provides marginal nesting habitat because of its small size and location next to areas frequently disturbed by human activity. The tree is approximately 30 feet tall and made up of multiple small trunks. A levee toe road terminates at the edge of the canopy; the levee road is located approximately 65 feet southwest of the tree; a gravel parking area associated with the pumping plant is located approximately 155 feet southeast of the tree; and the pumping plant is located approximately 200 feet southeast of the tree. No evidence of current or past raptor nesting was observed in this tree during the biological survey. Potential nesting habitat for Swainson's hawk is present adjacent to the study area in mature riparian trees along the Sutter Bypass. Foraging habitat is present in the study area's grassland and ruderal habitats and in adjacent agricultural fields. Swainson's hawk has low potential to nest in the study area, but has moderate potential to nest close by in riparian vegetation along the Sutter Bypass where project activities could affect nesting.



SOURCE: NAIP, 2016; CNDDDB, 2019; ESRI, 2012; ESA, 2019

Sutter Bypass Pumping Plant Rehabilitation Project

Figure 3-8
CNDDDB Swainson's Hawk Occurrences in the Project Vicinity

White-Tailed Kite

White-tailed kite (*Elanus leucurus*) is a California fully protected species under the Fish and Game Code. This species is a medium-sized raptor that is a yearlong resident in coastal and valley lowlands in California. Breeding occurs from February to October, peaking from May to August (CWHR, 2019). White-tailed kites nest in trees and shrubs in grasslands, oak woodlands, savannas, and riparian scrub. Their preferred foraging habitats include wetlands and grasslands, particularly herbaceous lowlands with minimal shrub and tree growth.

There are no CNDDB records for white-tailed kite in the study area or along the Sutter Bypass (CDFW, 2019d). The closest record is located approximately 10 miles northeast of Pumping Plant No. 2. The only tree in the study area is the small black walnut located at Pumping Plant No. 3. This tree provides marginal nesting habitat because of its small size and location next to areas frequently disturbed by human activity. The tree is approximately 30 feet tall and made up of multiple small trunks. A levee toe road terminates at the edge of the canopy; the levee road is located approximately 65 feet southwest of the tree; a gravel parking area associated with the pumping plant is located approximately 155 feet southeast of the tree; and the pumping plant is located approximately 200 feet southeast of the tree. No evidence of current or past raptor nesting was observed in this tree during the biological survey. Potential nesting habitat for white-tailed kite is present adjacent to the study area in mature riparian trees along the Sutter Bypass. Foraging habitat is present in the study area's grassland and ruderal habitats and in adjacent agricultural fields. White-tailed kite has low potential to nest within the study area, but has moderate potential to nest close by in riparian vegetation along the Sutter Bypass where project activities could affect nesting.

Song Sparrow “Modesto” Population

Song sparrow “Modesto” population (*Melospiza melodia*), also known as the Modesto song sparrow, is a California species of special concern. This species is a California endemic where it is locally numerous in the Sacramento Valley, the Sacramento–San Joaquin Delta (Delta), and the northern San Joaquin Valley. The primary requirements for this species are moderately dense vegetation to supply cover for nest sites, a source of standing or running water, semi-open canopies to allow light, and exposed ground or leaf litter for foraging. Habitat types include emergent freshwater marshes dominated by tule and cattail, as well as riparian willow thickets. Modesto song sparrows also nest in riparian forests of valley oak with sufficient understory of blackberry, along vegetated irrigation canals and levees, and in recently planted valley oak restoration sites (Shuford and Gardali, 2008).

The Modesto song sparrow remains locally numerous in areas where, by today's standards, extensive wetlands remain; this means that the highest densities occur in the Butte Sink area of the Sacramento Valley and in the Delta. Immediately adjacent to the Butte Sink, song sparrows breed in sparsely vegetated irrigation canals, yet they are almost entirely absent from the main stem and tributaries of the Sacramento River above Sacramento. Modesto song sparrows breed from mid-March to early August (Shuford and Gardali, 2008).

There are no CNDDDB records for song sparrow “Modesto” population in the study area or along the Sutter Bypass (CDFW, 2019d). The closest record is located approximately 19.5 miles southeast of Pumping Plant No. 1. There are no emergent marshes or riparian forests in the study area. The Himalayan blackberry brambles along the collecting canal at Pumping Plant No. 3 provide marginal nesting habitat for this species. This species has moderate potential to occur in the study area.

Pallid Bat

Pallid bat (*Antrozous pallidus*) is a California species of special concern. This species occurs throughout California except in parts of the high Sierra and the northwestern corner of the state (CWHR, 2019). The pallid bat inhabits a variety of habitats, such as grasslands, shrublands, woodlands, and forests; however, it is most abundant in open, dry habitats with rocky areas for roosting. Pallid bats roost alone, in small groups (2–20 bats), or gregariously (hundreds of individuals). Day and night roosts include caves, crevices in rocky outcrops and cliffs, mines, trees, and various human-made structures (e.g., bridges, barns, porches, bat boxes, and human-occupied as well as vacant buildings). These roosts generally have unobstructed entrances/exits and are high above the ground, warm, and inaccessible to terrestrial predators. Year-to-year and night-to-night roost reuse is common; however, bats may switch day roosts on a daily and seasonal basis (WBWG, 2017).

Mating occurs from October to February, parturition (giving birth to young) from late April to July, and weaning in August. Maternity colonies disperse between August and October. Winter habits are poorly known, but pallid bats apparently do not migrate long distances between summer and winter sites. In coastal California, males and females overwinter in a primary roost but occasionally use alternate roosts throughout the winter. Overwintering roosts have relatively cool, stable temperatures and are located in protected structures beneath the forest canopy or on the ground, out of direct sunlight. In other parts of the species’ range, males and females have been found hibernating alone or in small groups, wedged deeply into narrow fissures in mines, caves, and buildings (WBWG, 2017).

There are no CNDDDB records for pallid bat in the study area or along the Sutter Bypass (CDFW, 2019d). The closest record is located approximately 7 miles north of Pumping Plant No. 3 at the Sutter Buttes. A colony of an unidentified species of bat was observed in the abandoned control building at Pumping Plant No. 1 during the field review conducted on October 18, 2018. The colony was using the narrow gap between the outside of the control building window and the board covering the window. This bat colony was not observed during the March 14, 2019 fieldwork. The abandoned control buildings at Pumping Plant Nos. 1 and 2 provide potential roosting habitat for this species. This species has moderate potential to occur in the study area.

3.5 Wildlife Movement Corridors

Wildlife movement corridors link areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or areas of human disturbance or urban development. Topography and other natural factors in combination with urbanization can fragment or separate large open-space areas. The fragmentation of natural habitat can create isolated “islands” of

vegetation and habitat that may not provide a sufficient area to accommodate sustainable populations and can adversely affect genetic and species diversity. Retaining wildlife movement corridors ameliorates the effects of such fragmentation by allowing animals to move between remaining habitats, which in turn allows depleted populations to recover. Such movement may also promote genetic exchange between separated populations.

The study area consists of three small sites along the Sutter Bypass, which is located in a broader agricultural region. The bypass provides aquatic and riparian habitat suitable for wildlife movement through the area. The proposed project's scope and footprint are small relative to the available surrounding habitat, and much of the study area is developed (Figures 3-4, 3-5, and 3-6). The project would not substantially increase the developed footprint at the pumping plants or change existing wildlife movement corridors. Therefore, the project would have no impact on wildlife movement corridors.

3.6 Critical Habitat for Listed Fish and Wildlife Species

USFWS defines the term "critical habitat" in the FESA as a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. No designated critical habitat is present in the study area.

The East Borrow Canal of the Sutter Bypass west of the study area is designated as critical habitat for Central Valley Spring-Run Chinook Salmon and Central Valley Steelhead. The Sutter Bypass west of the study area is designated as critical habitat for Green Sturgeon.

Proposed critical habitat for western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) occurs outside the study area along the Sutter Bypass between Pumping Plants No. 2 and No. 3.

No suitable habitat is present in the study area for the federally listed species with nearby critical habitat. Therefore, the project would have no impact on critical habitat.

CHAPTER 4

Recommendations

4.1 Habitat Impacts

The term “impact area” refers to the maximum area of disturbance associated with construction of the proposed project. The footprint or description of the project has yet to be finalized; thus, the impacts of project construction on habitat types could not be quantified during preparation of this report. As such, for the purposes of this recommendations section, the analysis assumed that habitat impacts could occur throughout the study area.

4.2 Impacts on Sensitive Biological Resources and Recommended Conservation Measures

The following discussion describes the potential effects of the proposed project on sensitive biological resources and provides recommended conservation measures to protect these resources. This report will be used to inform the CEQA initial study and biological assessment in determining the project’s potential environmental impacts/effects, respectively, on sensitive biological resources.

4.2.1 Potential Waters of the United States and State and Sensitive Natural Communities

The following potentially jurisdictional waters of the United States and State occur in the study area: perennial riverine and inlet basin. These features are likely to be considered waters of the United States and State.

Impacts to these features would require the project to obtain permits from regulatory agencies (Section 404 CWA nationwide permit, Section 401 water quality certification, Section 1600 lake and streambed alteration agreement). Implementing the following conservation measures would ensure that the project would not affect potentially jurisdictional waters of the United States and State.

CM-1: High-visibility fencing should be erected at the edge of the study area boundary to prevent encroachment into unpermitted areas by construction equipment and personnel.

CM-2: Best management practices (BMPs) should be implemented to protect water quality:

- All fueling and maintenance of vehicles and other equipment and staging areas should occur in designated areas away from any water body.

- Diesel fuel and oil should be used, stored, and disposed of in accordance with standard protocols for handling of hazardous materials.
- All personnel involved in the use of hazardous materials should be trained in emergency response and spill control.
- All concrete washing and spoils dumping should occur in a designated location.
- Construction stockpiles should be covered to prevent blow-off or runoff during weather events.
- Temporarily disturbed areas should be reseeded with an appropriate seed mix or otherwise treated to reduce erosion and/or siltation.
- Erosion control measures should be placed in areas that are upslope of aquatic habitat, to prevent any soil or other materials from entering aquatic habitat. Silt fencing and natural/biodegradable erosion control measures (i.e., straw wattles and hay bales) should be used. Plastic monofilament netting (erosion control matting) should not be allowed because wildlife can become entangled in this type of erosion control material.
- Turbidity curtains, temporary barriers, or similar methods should be used during in-channel work to control silts and sediments.
- To address potential effects on receiving water quality during the construction period, DWR should prepare and comply with any requirements identified in a storm water pollution prevention plan to maintain water quality.

4.2.2 Federally Listed Plants

No federally listed plant species are expected to occur in the study area.

4.2.3 Special-Status Plants

As noted in Chapter 3, suitable habitat for special-status Ferris' milk-vetch, heartscale, recurved larkspur, San Joaquin spearscale, woolly rose-mallow, Heckard's pepper-grass, California alkali grass, and Sanford's arrowhead is present in the study area. Recurved larkspur, Heckard's pepper-grass, and California alkali grass were not observed during the March 2019 biological survey, which was conducted during the evident and identifiable period for these species. These species are not expected to occur in the study area. Implementing the following conservation measures would ensure that the project would not impact the remaining special-status plants with potential to occur.

CM-3: A properly timed survey for special-status plants should be conducted before construction, coinciding with the identification period of special-status plants with potential to occur in the study area. If no special-status plants are found, no further conservation measures would be required.

CM-4: If special-status plants are found during the survey, the plants should be avoided to the maximum extent practicable during project construction. Environmentally Sensitive Areas (ESAs) should be established around sensitive plant occurrences in the

study area to exclude project activities. Temporary exclusionary fencing should be installed to define the limits of the ESA.

CM-5: If special-status plants are identified, all maintenance personnel should be instructed as to the location and extent of the plants or populations in the study area and the importance of avoiding impacts on the species and their habitat.

CM-6: If special-status plants are identified, a qualified biologist should be present or on call during project activities to provide guidance on avoiding special-status plants and ensure that other avoidance measures (e.g., buffers, fencing) are observed.

CM-7: If avoidance is not feasible, the plants should be transplanted to a suitable location on property managed by DWR, and should be monitored for a minimum of 3 years to ensure that transplanted individuals have survived.

CM-8: If avoidance and transplantation are not feasible, or if transplanted individuals do not survive, DWR should coordinate with CDFW staff to develop appropriate alternative minimization measures.

4.2.4 Federally Listed Wildlife

Giant Garter Snake

As noted previously, suitable aquatic and terrestrial habitat for GGS exists in the study area.

CM-9: Construction personnel will receive environmental awareness training. This training will instruct workers on how to recognize GGS and their habitat, how they can avoid adverse effects to the snake, and what to do if they encounter a snake. If a snake is encountered in the action area, the qualified biologist will be contacted and construction activities will cease until the snake has left the action area or the determination is made that the snake will not be harmed. DWR will report any sighting and any incidental take to USFWS and CDFW immediately by telephone at USFWS: (916) 414-6541; CDFW at (916) 358-1340.

CM-10: Minimize vegetation clearing and ground disturbance. Vegetation clearing and ground disturbance will be confined to the minimum area necessary to facilitate project activities.

CM-11: Stage vehicles and equipment in existing staging areas. Project activities and staging of materials, portable equipment, vehicles, and supplies will be on disturbed areas where feasible. DWR maintenance staff members and qualified biologist (USFWS and CDFW approved) will ensure that appropriate best management practices (e.g., spill prevention and containment) are implemented in these areas to avoid contamination of GGS habitat.

CM-12: Inspect areas under vehicles and heavy equipment. DWR maintenance staff members trained in awareness of GGS will inspect under and around all vehicles and

heavy equipment for the presence of wildlife and other special-status species before the start of each workday. Awareness training provided by qualified biologist includes emphasis on checking equipment to avoid harming all wildlife.

CM-13: Deposit Spoils in Areas that do not Provide GGS Habitat. When feasible, DWR maintenance staff members will deposit spoils in areas that do not provide suitable GGS upland habitat. Such areas include compacted or gravel roadbeds and recently disked farm fields. If spoils disposal cannot occur as described for this measure, the following measure will be implemented:

- **Monitor Spoils Disposal to Ensure Avoidance of Biologically Sensitive Areas (BSAs).** If BSAs exist in action areas, excavated spoils will be placed to avoid these BSAs where possible. A qualified biologist trained in GGS identification will monitor all spoils disposal.

CM-14: Conduct Pre-Activity Surveys before Grading Spoils Pile. Immediately preceding grading deposited spoils piles, a qualified biologist will survey planned work areas for GGS and burrows. Additionally, a DWR staff member trained to identify garter snakes will monitor all work as it occurs. DWR grading of deposited spoils piles will only occur during periods when GGS are likely to be active in aquatic habitat. If GGS are observed prior to or during work, the “avoid and protect conservation measure” below will be followed.

CM-15: Avoid and protect individual GGSs found during work. Upon request of the qualified biologist who observed a GGS in the area or if a GGS is observed inside the action area, DWR maintenance staff members will stop work within 200 feet of the snake and allow the snake to leave on its own volition. Alternatively, individuals who can handle and relocate GGS – 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 GGS observation in the action areas. If the GGS does not voluntarily leave the action area and cannot be effectively captured and relocated unharmed (e.g., If the snake retreats into an underground burrow or below the water surface), project activities that may impact the snake in the immediate vicinity of the GGS will stop as needed to prevent harm to the snake and USFWS and CDFW will be consulted.

CM-16: Avoid using materials that may entangle snakes. Products with plastic monofilament or cross-joints in the netting that are bound/stitched (such as straw wattles, fiber rolls, or erosion control blankets), which could trap GGS or other wildlife will not be used.

CM-17: Remove refuse. To eliminate sources that could attract wildlife, which may include GGS predators, all trash, including food-related trash items, such as wrappers, cans, bottles and food scraps, will be disposed of in closed containers and removed from action areas at the end of each workday.

CM-18: Timing of Work (GGS Active Season) for ground disturbance. Work conducted in potential GGS habitat will occur between May 1 and October 1. Work in the habitat may also occur between October 2 and November 1 or April 1 through April 30 provided ambient air temperatures exceed approximately 75 degrees Fahrenheit (°F) during work and maximum daily air temperatures have exceeded approximately 75°F for at least 3 consecutive days immediately preceding work. During these periods, GGS are more likely to be active in aquatic habitats and less likely to be found in upland habitats. Depending on annual conditions, the rice fields surrounding the action area could be dry in early May reducing the likelihood for GGS being present in the local area (GGS likely move to areas where there is rice). Beginning in April, DWR maintenance staff will mobilize equipment and material to the site. No vegetation removal or ground disturbance will occur until May and following completion of biological surveys. If work needs to occur outside these periods, DWR will coordinate with USFWS and CDFW to determine if additional conservation measures are necessary.

CM-19: Conduct surveys and delineate biologically sensitive areas in Uplands. A qualified biologist will survey the planned work action areas 24 hours before conducting any work in upland habitat potentially supporting GGS. Surveys will target presence of snakes. Mowing may first be required to increase detectability of GGS. Mowing height will be no lower than 6 inches.

CM-20: Monitor work in aquatic habitat. As work is conducted, DWR staff members trained in the awareness of GGS and a qualified biologist will visually scan aquatic action areas for garter snakes. If garter snakes are observed, work will stop until the GGS has left the site on its own, or staff with a handling permit moves it to another location.

CM-21: Operate excavators to minimize disturbance of GGS in the active season. Before lowering an excavator bucket, DWR maintenance staff members will lightly brush the bucket across the water surface of the canal and any associated floating aquatic vegetation. The excavator bucket will then be slowly lowered into the water until the bottom of the canal is encountered. DWR maintenance staff members and a qualified biologist will visually inspect excavated spoils for GGS while spoils are being deposited. If GGS are observed, avoid and protect measures will be implemented.

CM-22: Dewater habitat. Aquatic habitat in the work area will be dewatered. If dewatering cannot remove all water, potential GGS prey (i.e., fish and tadpoles) will be removed so that GGS and other wildlife are not attracted to the action area. Once dewatered, the aquatic habitat will remain dry for at least 15 consecutive days prior to excavating or filling, unless consultation with CDFW and USFWS about the dewatered site conditions allows for excavation to begin prior to the 15 consecutive days.

CM-23: Restore temporarily disturbed habitat to preproject conditions. After project work is completed, any temporary fill and construction debris will be removed, and disturbed areas will be restored to preproject conditions or better conditions. Before

restoration, all non-biodegradable materials will be removed. Restoration may include re-contouring disturbed areas to their original configurations.

CM-24: Install, inspect, and maintain GGS fencing. Where sites conditions allow, DWR will install fencing along the action area as a way to divert moving snakes away from the active construction zone. The action area will be inspected daily during project activities by a qualified biologist including inspection of the fencing.

CM-25: USFWS and CDFW staff Visits. USFWS and CDFW may conduct site visits at any time during and post construction.

The following measures would be implemented to minimize impacts to GGS if they are trapped or injured:

CM-26: Qualified biologist will be present during all initial ground disturbance and will regularly inspect the Action Area for the presence of GGS. Following the initial ground disturbance, the Biological Monitor will be onsite daily and available throughout the duration of construction. If a GGS is encountered during construction activities, the Biological Monitor will stop construction activities until appropriate corrective measures have been completed or until it is determined that the snake will not be harmed. Capture and relocation of trapped or injured individuals will be conducted as described below:

<p>If free and unharmed: Cease activities in vicinity. Allow snake to leave the work site on its own volition.</p> <p>If trapped or injured: Cease activities in vicinity. Notify USFWS and CDFW. Snake may be moved only by a CDFW and USFWS approved biologist with agency permission.</p>	<p>Report all sightings to the US Fish and Wildlife Service, Sacramento Fish and Wildlife Office and to CDFW. The Biological Monitor must submit all sightings to CNDDDB using a Field Survey Form and provide copies to USFWS and CDFW. Incidental take must be reported immediately by phone to USFWS and CDFW and in writing within one (1) working day.</p>
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CM-27: Positive Identification and Relocation. Prior to capturing GGS a positive identification of the species must be made by the USFWS- and CDFW-approved qualified biologist. The relocation of GGS may only be performed by an agency-authorized biologist and proper species identification must be made prior to any capture or handling. Construction workers will receive training, by DWR, so they can recognize and respond to the presence of snakes in Action Areas. Worker training will emphasize the role that construction crews play in identifying and reporting snake observations to the monitoring biologist. Because GGS can be easily confused with other congeners, crews should be directed to assume that any snake encountered may be a GGS, until positively identified by the qualified biologist. Basic capture methods for GGS are as follows:

- A. Capture of GGS can be done by hand or facilitated with a snake hook. The snake can be pinned down by placing a hand or snake hook directly behind its head and applying gentle pressure. The amount of pressure required will depend on the size of the snake but it should be sufficient to prevent it from moving its head without injuring the animal.
- B. Grasp the snake by the tail. Note that all snakes should be handled firmly but with great care as smaller individuals are easily damaged through bruising and fractured ribs.
- C. Pick the snake up gently mid-body and deposit it in the bottom of a snake bag. Support the body of a snake in addition to holding behind the head. A snake held without the body supported may thrash around sufficiently to cause itself severe injury.
- D. Following capture, tie the top of the sack/pillowcase with a cord.

Note that wearing protective gloves during capture and handling snakes is not recommended as this reduces dexterity and may result in injury to the snake.

CM-28: Transport. As follows:

- A. All equipment to be used for snake capture, handling and transportation should be well maintained and must be checked before use. If a container other than a snake bag is used it should be inspected to that it has no sharp edges, protrusions, or rough surfaces that could cause injury during transport.
- B. Transported GGS should be protected from exposure to inclement weather, harsh environmental conditions, and major temperature fluctuations and extremes.
- C. Animals should be observed periodically to determine their state of well-being during transportation.
- D. Following use, all items used for transport must be cleaned thoroughly and disinfected, or discarded, as appropriate.
- E. Following snake handling appropriate hand washing is advised immediately afterward to avoid human health risks.

CM-29: Injury. In the event that an injured, viable GGS is identified, the injured individual will be transported to a CDFW-approved wildlife rehabilitation or veterinary facility. A clean snake bag will be kept onsite to transport the injured animal. Approved treatment facilities will be identified by CDFW as soon as possible.

CM-30: Release. GGS will be released as soon as practicable. While construction activities are ongoing, GGS captured within the Action Area will not be released at the point of capture but will be released at a site designated by CDFW. The following

conditions for releasing captive GGS have been adapted from the U.S. Geological Survey National Wildlife Health Center guidance on the use and care of wildlife during field research. As a general rule, field-captured animals should be released only:

- A. At sites that are approved by CDFW and in habitat suitable for species survival;
- B. When the released animal can be reasonably expected to function normally within the population;
- C. When local and seasonal conditions are conducive to survival;
- D. When the ability to survive in nature has not been irreversibly impaired; and
- E. When release is not likely to spread pathogens or contribute to disease processes in other ways.

When a GGS has been determined by the CDFW approved-biologist to meet these criteria it will be released at a designated, agency approved location.

CM-31: Depository. Any dead GGS will be salvaged and will be frozen as soon as possible. The carcass then will be provided to a designated depository. Below is an approved depository (other depositories may be used if approved by CDFW):

U.S. Geological Survey
Dixon Field Station
800 Business Park Drive, Suite D
Dixon, CA 95620

In addition, the following conservation measures would be implemented to minimize impacts to sensitive resources and during and following repair work:

CM-32: Diesel fuel and oil will be used, stored and disposed in accordance with standard protocols for handling of hazardous materials. All personnel involved in use of hazardous materials will be trained in emergency response and spill control.

CM-33: During construction activities, DWR maintenance staff members will prevent oil, grease, fuels, and other petroleum products; toxic chemicals; and any other substances that could be deleterious to aquatic life from contaminating the soil and/or entering waters of the state. DWR maintenance staff members will immediately remove such substances from any place where they could enter waters of the state and/or adversely affect fish and wildlife resources. DWR maintenance staff members will attempt to contain any releases or spills of such substances, and shall report any significant spills as soon as possible to the California Emergency Management Agency (Cal-EMA). In the event of a significant spill, work will cease immediately and workers will employ

containment methods if it is safe to do so. DWR will make notifications to the appropriate agencies within the regulatory time frames.

CM-34: If turbidity is expected to increase beyond baseline conditions, a turbidity curtain will be placed in the channel immediately downstream of the project to reduce impacts to water quality, and in-water work will be avoided to the extent practicable.

CM-35: All excavated material will be placed in upland areas where it will not likely be subject to regular flooding, mobilization of soluble metals, or affect ground water and will be stockpiled on disturbed areas.

The following conservation credit would be provided to address the potential risk of incidental take and to fully mitigate roughly proportional to the impacts.

CM-36: DWR will provide compensation associated with take of GGS by purchasing mitigation credits at a USFWS and CDFW approved mitigation bank. Mitigation credits will be purchased at a ratio of 3:1 (purchased: impacted) for permanent impacts to naturalized aquatic habitat (the sump at Pumping Plant No. 3), and a 1:1 ratio for permanent impacts to aquatic habitat with a concrete substrate (the inlet basins).

CM-37: Documentation of worker awareness training, preconstruction surveys, and biological monitoring efforts will be submitted to USFWS and CDFW on a weekly basis or at the completion of the project. A final monitoring report will be submitted to USFWS and CDFW after project construction is complete.

4.2.5 Special-Status Wildlife

Western Pond Turtle

As noted previously, suitable aquatic and terrestrial habitat for western pond turtle exists in the study area.

CM-38: A worker education and awareness program should be provided to all on-site personnel by a qualified biologist before the commencement of materials staging or ground-disturbing activities. The biologist should explain to construction workers how best to avoid impacts on western pond turtle and should include topics on species identification, life history, descriptions, and habitat requirements during various life stages. This education program can include handouts, illustrations, photographs, and project maps showing areas of minimization and avoidance measures. The crew members should sign a sign-in sheet documenting that they received the training.

CM-39: A qualified biologist should conduct a preconstruction survey within 24 hours before commencement of ground-disturbing activities.

CM-40: If western pond turtles are detected in the study area during the preconstruction survey, the biologist should relocate them to suitable habitat away from the construction zone, but in or near the study area on land managed by DWR.

CM-41: If western pond turtles are observed in the study area during construction, DWR should stop work within approximately 200 feet of the turtle, and a qualified biologist should be notified immediately. The qualified biologist may capture and relocate the turtle as described in CM-40. If the turtle does not voluntarily leave the maintenance area and cannot be captured and relocated unharmed, maintenance activities within approximately 200 feet of the turtle should stop to prevent harm to the turtle, and CDFW should be consulted to identify the next steps, if needed.

White-Tailed Kite, Modesto Song Sparrow, Migratory Birds, and Birds of Prey

Migratory birds and birds of prey, protected under 50 CFR 10, the Migratory Bird Treaty Act, and/or Section 3503 of the Fish and Game Code, have the potential to nest in and adjacent to the study area. Active cliff swallow (*Petrochelidon pyrrhonota*) colonies were observed on the structures in the work area for each pumping plant.

CM-42: Project activities with the potential to disturb active nests, including vegetation removal and building demolition, should be completed between September 15 and February 14, if feasible. If project activities occur during the nesting season (February 15 to September 14), a qualified biologist should conduct a preconstruction survey within 14 days before the beginning of work. Surveys should be conducted in suitable nesting habitat that could be affected by project activities (e.g., staging areas, spoils areas, access routes) and should include a 500-foot survey buffer for nesting birds of prey and a 100-foot survey buffer for all other protected birds. If the preconstruction survey shows no evidence of active nests, then no additional measures are recommended. If construction does not commence within 14 days of the preconstruction survey, or halts for more than 14 days, an additional preconstruction survey is recommended.

CM-43: Before construction, and during the non-nesting season, measures should be taken to prevent establishment of active cliff swallow nests on structures in the study area. Measures may include removing the remnant mud nests and installing exclusion netting (or other exclusion method developed in coordination with the qualified biologist). Exclusion netting should be installed and maintained throughout the nesting season or until the structures are demolished.

CM-44: If any active nests are found in the survey area, a worker education and awareness program should be provided to all on-site personnel by a qualified biologist before the commencement of materials staging or ground-disturbing activities. The biologist should explain to construction workers how best to avoid impacts on nesting birds and should include topics on species identification, life history, descriptions, and habitat requirements. This education program can include handouts, illustrations, photographs, and project maps showing areas of minimization and avoidance measures.

The crew members should sign a sign-in sheet documenting that they received the training.

CM-45: If any active nests are found in the survey area, an appropriate avoidance buffer zone should be established around the nests, as determined by the qualified biologist. The biologist should mark the avoidance buffer zone with construction tape or pin flags and should maintain the buffer zone until the young have fledged or the nest is no longer active, as determined by the qualified biologist. Buffer zones are typically 100 feet for migratory bird nests and 500 feet for a bird of prey nest (with the exception of burrowing owl and Swainson's hawk, as described below). The qualified biologist may reduce the avoidance buffer based on the specific construction activities to be conducted and the species present. Guidance from CDFW is recommended if establishing the recommended buffer zone is impractical.

CM-46: Project activities that may impact nesting birds should be monitored by a qualified biologist either continuously or periodically during work, as determined by the qualified biologist. The qualified biologist should be empowered to stop construction activities that, in the biologist's opinion, threaten to cause unanticipated and/or unpermitted nest abandonment. If maintenance activities are stopped, the qualified biologist should consult with CDFW (and USFWS if appropriate) to determine appropriate measures that DWR will implement to avoid adverse effects.

Burrowing Owl

As noted previously, suitable habitat for burrowing owl exists in and adjacent to the study area. The following measures, in addition to those identified above that pertain to all nesting bird species, would protect burrowing owl.

CM-47: Before project initiation, a qualified biologist should conduct preconstruction take avoidance surveys in accordance with Appendix D of the CDFW *Staff Report on Burrowing Owl Mitigation* (CDFW, 2012). One survey should be conducted no less than 14 days before the initiation of ground disturbance activities. A second survey should be conducted within 24 hours before ground disturbance. If no burrowing owls are identified in or in the vicinity of the work area, no additional mitigation measures are required.

CM-48: If burrowing owls or active burrows are observed in maintenance areas, DWR should establish a buffer based on the activity dates and the level of disturbance in accordance with the CDFW *Staff Report on Burrowing Owl Mitigation* (CDFW, 2012) and described in **Table 4-1**. Activities that involve heavy equipment would be expected to constitute medium to high levels of disturbance for the species. Buffers should 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. Maintenance activities should not occur within the established buffer and workers should avoid entering the area until a qualified biologist has determined that the burrows are unoccupied.

TABLE 4-1
RECOMMENDED RESTRICTED ACTIVITY DATES AND SETBACK DISTANCES BY LEVEL OF DISTURBANCE FOR BURROWING OWLS

Time of Year	Distance of Disturbance (feet) from Occupied Burrows		
	Low Disturbance	Medium Disturbance	High Disturbance
April 1 to August 15	600	1,500	1,500
August 16 to October 15	600	600	1,500
October 16 to March 31	150	300	1,500

NOTES:

Low = Presence of maintenance staff on foot or in vehicles conducting work with light equipment (maintenance trucks, all-terrain vehicles).

Medium = Heavy equipment use with moderate noise levels (approximately 50–75 A-weighted decibels [dBA]).

High = Heavy equipment with high noise levels (greater than 75 dBA).

CM-49: If active burrows cannot be avoided with the minimum buffers indicated in Table 4-1, construction should be monitored daily by a qualified biologist to ensure that burrowing owls are not disturbed.

CM-50: If complete avoidance is not feasible, DWR should consult with CDFW to determine the best approach to avoid and minimize potential impacts. Such measures may include passive relocation of owls during the nonbreeding season. Passive relocation of owls should be conducted in accordance with an exclusion and relocation plan developed in coordination with and approved by CDFW. The relocation plan should describe methods for passive relocation of the owls, destruction of suitable burrows, and maintenance of the site to prevent owl reoccupation.

Swainson's Hawk

As noted previously, the single tree at Pumping Plant No. 3 and the adjacent riparian corridor along the Sutter Bypass provide potential nesting habitat for Swainson's hawk. The following measures, in addition to those identified above that pertain to all nesting bird species, would protect Swainson's hawk.

CM-51: If construction activities are anticipated to commence during the Swainson's hawk nesting season (March 1 to September 15), a qualified biologist should conduct a minimum of two preconstruction surveys during the recommended survey periods in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee, 2000). All potential nest trees within 0.25 mile of the project footprint should be visually examined for potential Swainson's hawk nests, as accessible. If no active Swainson's hawk nests are identified in or within 0.25 mile of the study area, no further conservation measures are recommended.

CM-52: Active Swainson's hawk nests should be buffered from construction activities by 0.25 mile to the extent feasible. The qualified biologist may reduce the avoidance buffer

based on the specific construction activities to be conducted, barriers present between construction work and the nest, the nest stage, and other factors.

CM-53: If work will occur within 0.25 mile of the nest, then construction should be monitored daily by a qualified biologist until s/he feels comfortable that construction activities will not cause disturbance to the nest. Subsequent monitoring by the qualified biologist should be conducted as determined necessary by the qualified biologist to ensure that no nest disturbance occurs.

Bats

The human-made structures in the study area provide potential roosting habitat for bats, including pallid bat. A colony of an unidentified bat species was observed in the abandoned control building at Pumping Plant No. 1 during the field review conducted on October 18, 2018. The colony was using the narrow gap between the outside of the control building window and the board covering the window. This bat colony was not observed during the March 14, 2019, fieldwork.

CM-54: If feasible, within the year before construction, the structures should be surveyed for bats and/or bat sign by a qualified biologist. If evidence of bats is observed, exclusion measures using one-way exits should be implemented. Exclusion devices should be installed between March 1 and April 1, or between September 1 and November 1, which is outside of the maternity and hibernation season. If it is determined that the bats are not using the structure as a maternity or hibernation site, exclusion devices may be installed at any time. Exclusion devices should remain in place until the structures are demolished.

CM-55: If bats are not found to be occupying the narrow gap between the outside of the abandoned control building window and the board covering the window at Pumping Plant No. 1, the board should be removed to eliminate the potential roosting habitat.

CM-56: If exclusion devices are not installed during the windows specified in CM-54, a preconstruction survey should be conducted within 14 days before project initiation to determine whether bats are using the structures. If no bats and/or bat signs are observed, no further conservation measures are recommended. If construction does not commence within 14 days of the preconstruction survey, or if it halts for more than 14 days, a new survey is recommended.

CM-57: If during the preconstruction survey it is determined that bats are using the structures as a maternity or hibernation roost, a minimum 250-foot avoidance buffer should be established around the roost/maternity until it is no longer occupied, as determined by the qualified biologist. The avoidance buffer may be reduced if a qualified biologist monitors the construction activities and determines that the roost is not being disturbed. Reduction of the buffer depends on the species of bat, the location of the roost relative to project activities, activities during the time the roost is active, and other project-specific conditions. No work should occur in the buffer until it is determined that

the bats have left on their own, or until the end of the hibernation or maternity season, at which time exclusion devices can be installed.

CM-58: If during the preconstruction survey it is determined that the bats are not using the structures as a maternity or hibernation site, exclusion devices should be installed a minimum of 48 hours before construction to ensure that the bats have time to leave before construction begins. Exclusion devices should remain in place until the structures are demolished.

CHAPTER 5

References and Report Preparation

5.1 References

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5.2 Document Preparation

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Appendix A

Regulatory Context

Federal

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (USFWS) administers the Federal Endangered Species Act (FESA) (16 U.S. Code [USC] 153 et seq.), the Migratory Bird Treaty Act (16 USC 703–711), and the Bald and Golden Eagle Protection Act (16 USC 668). These regulations are described below.

Federal Endangered Species Act

The FESA gives the Secretary of the Interior and Secretary of Commerce joint authority to list a species as threatened or endangered (16 USC 1533[c]). Two federal agencies oversee the FESA: USFWS has jurisdiction over plants, wildlife, and resident fish, while the National Marine Fisheries Service (NMFS) has jurisdiction over anadromous fish and marine fish and mammals. Section 7 of the FESA mandates that federal agencies consult with USFWS and NMFS to ensure that federal agency actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species. The FESA prohibits the take of any fish or wildlife species listed as threatened or endangered, including the destruction of habitat that could hinder species recovery. (“Take” is defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting to engage in any such conduct.)

Section 10 requires that an “incidental take” permit be issued before any public or private action may be taken that could take an endangered or threatened species. The permit requires preparation and implementation of a habitat conservation plan that would offset the take of individuals incidental to implementation of a proposed project, by providing for the protection of the affected species.

Under the FESA, a federal agency reviewing a project within its jurisdiction must determine whether any federally listed threatened or endangered species may be present in the study area and whether the proposed action would have a potentially significant impact on such species. The agency also must determine whether the proposed action is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536[a][3] and 1536[a][4]).

Critical Habitat

USFWS designates critical habitat for listed species under the FESA. Critical habitat designations are specific areas in the geographic region occupied by a listed species that are determined to be critical to the species’ survival and recovery in accordance with the FESA. Federal entities issuing permits or acting as lead agencies must show that their actions do not negatively affect the critical habitat to the extent that it impedes the recovery of the species.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (16 USC 703 Supp. I, 1989) generally prohibits the killing, possessing, or trading of migratory birds, bird parts, eggs, and nests, except as provided by the statute.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act, enforced by USFWS, makes it illegal to import, export, take (which includes “molest” or “disturb”), sell, purchase, or barter any bald eagle (*Haliaeetus leucocephalus*) or golden eagle (*Aquila chrysaetos*) or parts thereof.

U.S. Army Corps of Engineers—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 401

Under CWA Section 401, applicants for a federal license or permit to conduct activities that 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 have a federal component and may affect state water quality (including projects that require federal agency approval, such as issuance of a Section 404 permit) must also comply with CWA Section 401.

Section 402

Under CWA Section 402, the State Water Resources Control Board (SWRCB) has adopted the *General Construction Activity Storm Water Permit* (General Permit) for stormwater discharges associated with any construction activity—clearing, grading, excavation reconstruction, and dredge and fill activities—that results in the disturbance of at least 1 acre of total land area. The General Permit requires the site owner to notify the State, to prepare and implement a storm water pollution prevention plan, and to monitor the effectiveness of the plan.

De minimis discharge activities that are regulated by an individual or general permit under the National Pollutant Discharge Elimination System (NPDES) permit, such as discharges resulting in construction dewatering, also require the General Order for Dewatering and Other Low Threat Discharge to Surface Waters Permit (Section 402). Project applicants/proponents should apply for this permit concurrently with the NPDES permit application.

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 the U.S. Environmental Protection Agency (EPA).

Compliance with CWA Section 404 requires compliance with several other environmental laws and regulations. USACE cannot issue an individual permit or verify the use of a general nationwide permit until the requirements of the National Environmental Policy Act (NEPA), the

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.

State

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW), previously known as the California Department of Fish and Game, administers a number of laws and programs designed to protect fish and wildlife resources under the Fish and Game Code. Among these laws and programs are the California Endangered Species Act (CESA) (Fish and Game Code Section 2050 et seq.), Fully Protected Species designations (Fish and Game Code Section 3511), Native Plant Protection Act (Fish and Game Code Sections 1900–1913), and Lake or Streambed Alteration Agreement Program (Fish and Game Code Sections 1600–1616). These regulations are described below.

California Endangered Species Act

In 1984, the State of California implemented the CESA, which prohibits the take of State-listed endangered and threatened species, although habitat destruction is not included in the State’s definition of take. Section 2090 of the Fish and Game Code requires State agencies to comply with endangered species protection and recovery requirements and promote the conservation of these species. CDFW administers the act and authorizes take through Fish and Game Code Section 2081 agreements (except for designated “fully protected species,” see below). Unlike its federal counterpart, the CESA protects candidate species that have been petitioned for listing.

Regarding listed rare and endangered plant species, the CESA defers to the California Native Plant Protection Act (see below).

Fish and Game Code Section 3503

Section 3503.5 of the Fish and Game Code provides that it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird, except as otherwise provided in the Fish and Game Code or any regulation adopted pursuant thereto. CDFW considers construction activities that result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment and/or reproductive failure, to be a “take.” Any loss of eggs, nests, or young or any activities resulting in nest abandonment would constitute a significant project impact.

Fully Protected Species

Certain species are considered fully protected, meaning that the code explicitly prohibits all take of individuals of these species except take permitted for scientific research. Fish and Game Code 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 the 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.

Native Plant Protection Act

Fish and Game Code Sections 1900–1913, the Native Plant Protection Act, is intended to preserve, protect, and enhance endangered or rare native plants in California. The act directs CDFW to establish criteria for determining which native plants are rare or endangered. Under Fish and Game Code Section 1901, a species is endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes. A species is rare when, although not threatened with immediate extinction, it is in such small numbers throughout its range that it may become endangered. The act also directs the California Fish and Game Commission to adopt regulations governing the taking, possessing, propagation, or sale of any endangered or rare native plant.

California Rare Plant Rank System

CDFW works in collaboration with the California Native Plant Society 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 Rank (CRPR) system. This information is published in the *Inventory of Rare and Endangered Vascular Plants of California*. Potential impacts on populations of CRPR species may receive consideration in California Environmental Quality Act (CEQA) reviews. The CRPRs are defined as follows:

- **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)

In general, plants with CRPR 1A, 1B, or 2 are considered to meet the criteria of State CEQA Guidelines Section 15380. Such plants also meet the definition of Fish and Game Code Section 1901, Chapter 10 (Native Plant Protection Act) and Sections 2062 and 2067 (CESA).

Lake or Streambed Alteration Program

CDFW regulates activities that would interfere with the natural flow of or substantially alter the channel, bed, or bank of a lake, river, or stream. Section 1602 of the Fish and Game Code requires that CDFW be notified regarding lake or stream alteration activities. If, after notification is complete, CDFW determines that an activity may substantially adversely affect an existing fish or wildlife resource, CDFW has authority to issue a streambed alteration agreement under Section 1603 of the Fish and Game Code. Requirements to protect the integrity of biological resources and water quality are often conditions of streambed alteration agreements. These may include avoidance or minimization of heavy-equipment use in stream zones, limitations on work periods to avoid impacts on wildlife and fisheries resources, and measures to restore degraded sites or compensate for permanent habitat losses.

Species of Special Concern

CDFW maintains lists of candidate-endangered species and candidate-threatened species. California candidate species are afforded the same level of protection as listed species. California also designates species of special concern, which are species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. These species do not have the same legal protection as listed species or fully protected species, but may be added to official lists in the future. CDFW intends the species of special concern list to be a management tool for consideration in future land use decisions. The Special Plants list can be found at <http://www.dfg.ca.gov/biogeodata/cnddb.pdf/sppplants.pdf>; the Special Animals list can be found at <http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/spanimals.pdf>.

State Water Resources Control Board—Porter-Cologne Water Quality Control Act

The SWRCB and the Regional Water Quality Control Boards (RWQCBs) are the 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 SWRCB and RWQCBs 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 the required USACE permit). The enforcement of the State’s water quality requirements is not solely the purview of the SWRCB and RWQCBs and their staff. Other agencies (e.g., CDFW) have the ability to enforce certain water quality provisions in State law.

State CEQA Guidelines Section 15380

Threatened and endangered species are protected by specific federal and State statutes. In addition, State CEQA Guidelines Section 15380(b) provides that a species not included on the federal or State list of protected species may be considered rare or endangered if the species can be shown to meet certain specific criteria. These criteria have been modeled after the definition in the FESA and the section of the Fish and Game Code that discusses rare or endangered plants or animals. This section was included in the State CEQA Guidelines primarily for situations in which a public agency is reviewing a project that may have a significant effect on a candidate species that has not yet been listed by CDFW or USFWS. CEQA provides the ability to protect species from potential project impacts until the respective agencies have the opportunity to designate the species’ protection.

CEQA also specifies the protection of other locally or regionally significant resources, including natural communities or habitats. Although natural communities do not presently have legal protection, CEQA requires an assessment of such communities and potential project impacts. Natural communities identified as sensitive in the CNDDb are considered by CDFW to be significant resources and fall under the State CEQA Guidelines for addressing impacts. Local planning documents such as general and area plans often identify natural communities.

Yuba-Sutter Natural Community Conservation Plan/Habitat Conservation Plan

The Yuba-Sutter Natural Community Conservation Plan/Habitat Conservation Plan is a cooperative planning effort initiated by Yuba and Sutter Counties in connection with improvements to State Routes 99 and 70 and future development in the area surrounding those highways. The planning area currently encompasses most of these two counties. The draft plan currently covers 4 different plant species and 15 wildlife species. Because the Yuba-Sutter Natural Community Conservation Plan/Habitat Conservation Plan is still in development, there are no requirements for compliance.

Appendix B

Agency Lists and Special- Status Species Considered in the Study Area



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:

February 28, 2019

Consultation Code: 08ESMF00-2019-SLI-1221

Event Code: 08ESMF00-2019-E-03880

Project Name: Sutter Bypass Old Pumping Plant Removal and Gravity Drain Rehabilitation Project (Pumping Plant 1)

Subject: List of threatened and endangered species that may occur in your proposed project location, and/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, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) 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 Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

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 ECOS-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 ECOS-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:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

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 Tracking Number 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

Consultation Code: 08ESMF00-2019-SLI-1221

Event Code: 08ESMF00-2019-E-03880

Project Name: Sutter Bypass Old Pumping Plant Removal and Gravity Drain Rehabilitation Project (Pumping Plant 1)

Project Type: STREAM / WATERBODY / CANALS / LEVEES / DIKES

Project Description: The Sutter Bypass Old Pumping Plant Removal and Gravity Drain Rehabilitation Project consists of three pumping plant locations along the east levee of the Sutter Bypass in Sutter County, California. The Proposed Project would retrofit the maintenance structures at the three existing pumping plants to create a more accessible and safe environment for inspections and maintenance activities.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/38.9322910229291N121.6344548666217W>



Counties: Sutter, CA

Endangered Species Act Species

There is a total of 7 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 Fisheries¹, 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.

-
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.

Reptiles

NAME	STATUS
Giant Garter Snake <i>Thamnophis gigas</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850 Habitat assessment guidelines: https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

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



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad IS (Kirkville (3812187) OR Tisdale Weir (3912117) OR Eldorado Bend (3812177) OR Gilsizer Slough (3912116) OR Sutter Causeway (3812186) OR Knights Landing (3812176) OR Olivehurst (3912115) OR Nicolaus (3812185) OR Verona (3812175))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Agelaius tricolor</i> tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
<i>Anthicus antiochensis</i> Antioch Dunes anthicid beetle	IICOL49020	None	None	G1	S1	
<i>Anthicus sacramento</i> Sacramento anthicid beetle	IICOL49010	None	None	G1	S1	
<i>Ardea alba</i> great egret	ABNGA04040	None	None	G5	S4	
<i>Ardea herodias</i> great blue heron	ABNGA04010	None	None	G5	S4	
<i>Astragalus tener var. ferrisiae</i> Ferris' milk-vetch	PDFAB0F8R3	None	None	G2T1	S1	1B.1
<i>Athene cunicularia</i> burrowing owl	ABNSB10010	None	None	G4	S3	SSC
<i>Bombus crotchii</i> Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
<i>Branta hutchinsii leucopareia</i> cackling (=Aleutian Canada) goose	ABNJB05035	Delisted	None	G5T3	S3	WL
<i>Buteo swainsoni</i> Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
<i>Charadrius montanus</i> mountain plover	ABNNB03100	None	None	G3	S2S3	SSC
<i>Cicindela hirticollis abrupta</i> Sacramento Valley tiger beetle	IICOL02106	None	None	G5TH	SH	
<i>Coastal and Valley Freshwater Marsh</i> Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
<i>Coccyzus americanus occidentalis</i> western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
<i>Delphinium recurvatum</i> recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
<i>Elanus leucurus</i> white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP



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
<i>Emys marmorata</i> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<i>Erethizon dorsatum</i> North American porcupine	AMAFJ01010	None	None	G5	S3	
<i>Great Valley Cottonwood Riparian Forest</i> Great Valley Cottonwood Riparian Forest	CTT61410CA	None	None	G2	S2.1	
<i>Great Valley Mixed Riparian Forest</i> Great Valley Mixed Riparian Forest	CTT61420CA	None	None	G2	S2.2	
<i>Hibiscus lasiocarpus var. occidentalis</i> woolly rose-mallow	PDMAL0H0R3	None	None	G5T3	S3	1B.2
<i>Lasiurus blossevillei</i> western red bat	AMACC05060	None	None	G5	S3	SSC
<i>Lasiurus cinereus</i> hoary bat	AMACC05030	None	None	G5	S4	
<i>Laterallus jamaicensis coturniculus</i> California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
<i>Lepidium latipes var. heckardii</i> Heckard's pepper-grass	PDBRA1M0K1	None	None	G4T1	S1	1B.2
<i>Lepidurus packardii</i> vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G4	S3S4	
<i>Linderiella occidentalis</i> California linderiella	ICBRA06010	None	None	G2G3	S2S3	
<i>Monardella venosa</i> veiny monardella	PDLAM18082	None	None	G1	S1	1B.1
<i>Nycticorax nycticorax</i> black-crowned night heron	ABNGA11010	None	None	G5	S4	
<i>Oncorhynchus mykiss irideus pop. 11</i> steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
<i>Oncorhynchus tshawytscha pop. 6</i> chinook salmon - Central Valley spring-run ESU	AFCHA0205A	Threatened	Threatened	G5	S1	
<i>Pogonichthys macrolepidotus</i> Sacramento splittail	AFCJB34020	None	None	GNR	S3	SSC
<i>Pseudobahia bahiifolia</i> Hartweg's golden sunburst	PDAST7P010	Endangered	Endangered	G2	S2	1B.1
<i>Puccinellia simplex</i> California alkali grass	PMPOA53110	None	None	G3	S2	1B.2
<i>Riparia riparia</i> bank swallow	ABPAU08010	None	Threatened	G5	S2	
<i>Sagittaria sanfordii</i> Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2
<i>Spirinchus thaleichthys</i> longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	



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
<i>Symphotrichum lentum</i> Suisun Marsh aster	PDASTE8470	None	None	G2	S2	1B.2
<i>Thaleichthys pacificus</i> eulachon	AFCHB04010	Threatened	None	G5	S3	
<i>Thamnophis gigas</i> giant gartersnake	ARADB36150	Threatened	Threatened	G2	S2	
<i>Trichocoronis wrightii</i> var. <i>wrightii</i> Wright's trichocoronis	PDAST9F031	None	None	G4T3	S1	2B.1

Record Count: 43



Plant List

Inventory of Rare and Endangered Plants

5 matches found. *Click on scientific name for details*

Search Criteria

California Rare Plant Rank is one of [1A, 1B, 2A, 2B], Found in Quads 3912117, 3912116, 3912115, 3812187, 3812186, 3812185, 3812177 3812176 and 3812175;

[Modify Search Criteria](#) [Export to Excel](#) [Modify Columns](#) [Modify Sort](#) [Display Photos](#)

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Hibiscus lasiocarpus var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3
Monardella venosa	veiny monardella	Lamiaceae	annual herb	May,Jul	1B.1	S1	G1
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	1B.2	S2	G3
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	Asteraceae	annual herb	May-Sep	2B.1	S1	G4T3

Suggested Citation

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Questions and Comments

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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:

February 28, 2019

Consultation Code: 08ESMF00-2019-SLI-1223

Event Code: 08ESMF00-2019-E-03884

Project Name: Sutter Bypass Old Pumping Plant Removal and Gravity Drain Rehabilitation Project (Pumping Plant 2)

Subject: List of threatened and endangered species that may occur in your proposed project location, and/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, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) 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 Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

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 ECOS-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 ECOS-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:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

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 Tracking Number 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

Consultation Code: 08ESMF00-2019-SLI-1223

Event Code: 08ESMF00-2019-E-03884

Project Name: Sutter Bypass Old Pumping Plant Removal and Gravity Drain Rehabilitation Project (Pumping Plant 2)

Project Type: STREAM / WATERBODY / CANALS / LEVEES / DIKES

Project Description: The Sutter Bypass Old Pumping Plant Removal and Gravity Drain Rehabilitation Project consists of three pumping plant locations along the east levee of the Sutter Bypass in Sutter County, California. The Proposed Project would retrofit the maintenance structures at the three existing pumping plants to create a more accessible and safe environment for inspections and maintenance activities.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/39.02625609722702N121.72639110862616W>



Counties: Sutter, CA

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 Fisheries¹, 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.

-
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 <i>Coccyzus americanus</i> Population: Western U.S. DPS There is proposed critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Giant Garter Snake <i>Thamnophis gigas</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850 Habitat assessment guidelines: https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Hartweg's Golden Sunburst <i>Pseudobahia bahiifolia</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1704	Endangered

Critical habitats

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



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad IS (Sutter Buttes (3912127) OR Tisdale Weir (3912117) OR Kirkville (3812187) OR Sutter (3912126) OR Gilsizer Slough (3912116) OR Sutter Causeway (3812186) OR Yuba City (3912125) OR Olivehurst (3912115) OR Nicolaus (3812185))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Agelaius tricolor</i> tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
<i>Anthicus antiochensis</i> Antioch Dunes anthicid beetle	IICOL49020	None	None	G1	S1	
<i>Anthicus sacramento</i> Sacramento anthicid beetle	IICOL49010	None	None	G1	S1	
<i>Antigone canadensis tabida</i> greater sandhill crane	ABNMK01014	None	Threatened	G5T4	S2	FP
<i>Antrozous pallidus</i> pallid bat	AMACC10010	None	None	G5	S3	SSC
<i>Ardea alba</i> great egret	ABNGA04040	None	None	G5	S4	
<i>Ardea herodias</i> great blue heron	ABNGA04010	None	None	G5	S4	
<i>Astragalus tener var. ferrisiae</i> Ferris' milk-vetch	PDFAB0F8R3	None	None	G2T1	S1	1B.1
<i>Bombus crotchii</i> Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
<i>Branta hutchinsii leucopareia</i> cackling (=Aleutian Canada) goose	ABNJB05035	Delisted	None	G5T3	S3	WL
<i>Buteo swainsoni</i> Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
<i>Charadrius montanus</i> mountain plover	ABNNB03100	None	None	G3	S2S3	SSC
<i>Cicindela hirticollis abrupta</i> Sacramento Valley tiger beetle	IICOL02106	None	None	G5TH	SH	
<i>Coastal and Valley Freshwater Marsh</i> Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
<i>Coccyzus americanus occidentalis</i> western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
<i>Delphinium recurvatum</i> recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	



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
<i>Dipodomys californicus eximius</i> Marysville California kangaroo rat	AMAFD03071	None	None	G4T1	S1	SSC
<i>Elanus leucurus</i> white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
<i>Emys marmorata</i> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<i>Erethizon dorsatum</i> North American porcupine	AMAFJ01010	None	None	G5	S3	
<i>Great Valley Cottonwood Riparian Forest</i> Great Valley Cottonwood Riparian Forest	CTT61410CA	None	None	G2	S2.1	
<i>Great Valley Mixed Riparian Forest</i> Great Valley Mixed Riparian Forest	CTT61420CA	None	None	G2	S2.2	
<i>Hibiscus lasiocarpus var. occidentalis</i> woolly rose-mallow	PDMAL0H0R3	None	None	G5T3	S3	1B.2
<i>Laterallus jamaicensis coturniculus</i> California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
<i>Layia septentrionalis</i> Colusa layia	PDAST5N0F0	None	None	G2	S2	1B.2
<i>Lepidurus packardii</i> vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G4	S3S4	
<i>Linderiella occidentalis</i> California linderiella	ICBRA06010	None	None	G2G3	S2S3	
<i>Melospiza melodia</i> song sparrow ("Modesto" population)	ABPBXA3010	None	None	G5	S3?	SSC
<i>Monardella venosa</i> veiny monardella	PDLAM18082	None	None	G1	S1	1B.1
<i>Navarretia leucocephala ssp. bakeri</i> Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
<i>Northern Hardpan Vernal Pool</i> Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	
<i>Oncorhynchus mykiss irideus pop. 11</i> steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
<i>Oncorhynchus tshawytscha pop. 6</i> chinook salmon - Central Valley spring-run ESU	AFCHA0205A	Threatened	Threatened	G5	S1	
<i>Pogonichthys macrolepidotus</i> Sacramento splittail	AFCJB34020	None	None	GNR	S3	SSC
<i>Pseudobahia bahiifolia</i> Hartweg's golden sunburst	PDAST7P010	Endangered	Endangered	G2	S2	1B.1
<i>Rana boylei</i> foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
<i>Riparia riparia</i> bank swallow	ABPAU08010	None	Threatened	G5	S2	



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
<i>Sagittaria sanfordii</i> Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2
<i>Spinus lawrencei</i> Lawrence's goldfinch	ABPBY06100	None	None	G3G4	S3S4	
<i>Thamnophis gigas</i> giant gartersnake	ARADB36150	Threatened	Threatened	G2	S2	
<i>Trichocoronis wrightii</i> var. <i>wrightii</i> Wright's trichocoronis	PDAST9F031	None	None	G4T3	S1	2B.1
<i>Vireo bellii pusillus</i> least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	

Record Count: 44



Plant List

Inventory of Rare and Endangered Plants

9 matches found. *Click on scientific name for details*

Search Criteria

California Rare Plant Rank is one of [1A, 1B, 2A, 2B], Found in Quads 3912127, 3912126, 3912125, 3912117, 3912116, 3912115, 3812187 3812186 and 3812185;

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Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Astragalus tener var. ferrisiae	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	1B.1	S1	G2T1
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	1B.2	S2?	G2?
Hibiscus lasiocarpus var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3
Layia septentrionalis	Colusa layia	Asteraceae	annual herb	Apr-May	1B.2	S2	G2
Monardella venosa	veiny monardella	Lamiaceae	annual herb	May,Jul	1B.1	S1	G1
Navarretia leucocephala ssp. bakeri	Baker's navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G4T2
Pseudobahia bahiifolia	Hartweg's golden sunburst	Asteraceae	annual herb	Mar-Apr	1B.1	S2	G2
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	Asteraceae	annual herb	May-Sep	2B.1	S1	G4T3

Suggested Citation

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Questions and Comments

rareplants@cnps.org



United States Department of the Interior

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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:

February 28, 2019

Consultation Code: 08ESMF00-2019-SLI-1225

Event Code: 08ESMF00-2019-E-03888

Project Name: Sutter Bypass Old Pumping Plant Removal and Gravity Drain Rehabilitation Project (Pumping Plant 3)

Subject: List of threatened and endangered species that may occur in your proposed project location, and/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, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) 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 Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

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 ECOS-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 ECOS-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:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

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 Tracking Number 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

Consultation Code: 08ESMF00-2019-SLI-1225

Event Code: 08ESMF00-2019-E-03888

Project Name: Sutter Bypass Old Pumping Plant Removal and Gravity Drain Rehabilitation Project (Pumping Plant 3)

Project Type: STREAM / WATERBODY / CANALS / LEVEES / DIKES

Project Description: The Sutter Bypass Old Pumping Plant Removal and Gravity Drain Rehabilitation Project consists of three pumping plant locations along the east levee of the Sutter Bypass in Sutter County, California. The Proposed Project would retrofit the maintenance structures at the three existing pumping plants to create a more accessible and safe environment for inspections and maintenance activities.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/39.12042730108925N121.77942436893949W>



Counties: Sutter, CA

Endangered Species Act Species

There is a total of 8 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 Fisheries¹, 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.

-
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 <i>Coccyzus americanus</i> Population: Western U.S. DPS There is proposed critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Giant Garter Snake <i>Thamnophis gigas</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850 Habitat assessment guidelines: https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

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



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad< IS (Meridian (3912128) OR Grimes (3912118) OR Dunnigan (3812188) OR Sutter Buttes (3912127) OR Tisdale Weir (3912117) OR Kirkville (3812187) OR Sutter (3912126) OR Sutter Causeway (3812186) OR Gilsizer Slough (3912116))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Agelaius tricolor</i> tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
<i>Ambystoma californiense</i> California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
<i>Antigone canadensis tabida</i> greater sandhill crane	ABNMK01014	None	Threatened	G5T4	S2	FP
<i>Antrozous pallidus</i> pallid bat	AMACC10010	None	None	G5	S3	SSC
<i>Ardea alba</i> great egret	ABNGA04040	None	None	G5	S4	
<i>Ardea herodias</i> great blue heron	ABNGA04010	None	None	G5	S4	
<i>Astragalus tener var. ferrisiae</i> Ferris' milk-vetch	PDFAB0F8R3	None	None	G2T1	S1	1B.1
<i>Atriplex cordulata var. cordulata</i> heartscale	PDCHE040B0	None	None	G3T2	S2	1B.2
<i>Bombus crotchii</i> Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
<i>Branta hutchinsii leucopareia</i> cackling (=Aleutian Canada) goose	ABNJB05035	Delisted	None	G5T3	S3	WL
<i>Buteo swainsoni</i> Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
<i>Charadrius montanus</i> mountain plover	ABNNB03100	None	None	G3	S2S3	SSC
<i>Chloropyron palmatum</i> palmate-bracted bird's-beak	PDSCR0J0J0	Endangered	Endangered	G1	S1	1B.1
<i>Cicindela hirticollis abrupta</i> Sacramento Valley tiger beetle	IICOL02106	None	None	G5TH	SH	
<i>Coastal and Valley Freshwater Marsh</i> Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
<i>Coccyzus americanus occidentalis</i> western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
<i>Delphinium recurvatum</i> recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2



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
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
<i>Dipodomys californicus eximius</i> Marysville California kangaroo rat	AMAFD03071	None	None	G4T1	S1	SSC
<i>Emys marmorata</i> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<i>Erethizon dorsatum</i> North American porcupine	AMAFJ01010	None	None	G5	S3	
<i>Extriplex joaquinana</i> San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
<i>Great Valley Cottonwood Riparian Forest</i> Great Valley Cottonwood Riparian Forest	CTT61410CA	None	None	G2	S2.1	
<i>Great Valley Mixed Riparian Forest</i> Great Valley Mixed Riparian Forest	CTT61420CA	None	None	G2	S2.2	
<i>Great Valley Willow Scrub</i> Great Valley Willow Scrub	CTT63410CA	None	None	G3	S3.2	
<i>Hibiscus lasiocarpus var. occidentalis</i> woolly rose-mallow	PDMAL0H0R3	None	None	G5T3	S3	1B.2
<i>Lasiurus blossevillii</i> western red bat	AMACC05060	None	None	G5	S3	SSC
<i>Lasiurus cinereus</i> hoary bat	AMACC05030	None	None	G5	S4	
<i>Lasthenia glabrata ssp. coulteri</i> Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
<i>Laterallus jamaicensis coturniculus</i> California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
<i>Layia septentrionalis</i> Colusa layia	PDAST5N0F0	None	None	G2	S2	1B.2
<i>Lepidurus packardii</i> vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G4	S3S4	
<i>Linderiella occidentalis</i> California linderiella	ICBRA06010	None	None	G2G3	S2S3	
<i>Melospiza melodia</i> song sparrow ("Modesto" population)	ABPBXA3010	None	None	G5	S3?	SSC
<i>Monardella venosa</i> veiny monardella	PDLAM18082	None	None	G1	S1	1B.1
<i>Myotis yumanensis</i> Yuma myotis	AMACC01020	None	None	G5	S4	
<i>Navarretia leucocephala ssp. bakeri</i> Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
<i>Northern Hardpan Vernal Pool</i> Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	



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
<i>Oncorhynchus mykiss irideus</i> pop. 11 steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
<i>Oncorhynchus tshawytscha</i> pop. 6 chinook salmon - Central Valley spring-run ESU	AFCHA0205A	Threatened	Threatened	G5	S1	
<i>Perognathus inornatus</i> San Joaquin Pocket Mouse	AMAFD01060	None	None	G2G3	S2S3	
<i>Pseudobahia bahiifolia</i> Hartweg's golden sunburst	PDAST7P010	Endangered	Endangered	G2	S2	1B.1
<i>Rana boylei</i> foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
<i>Riparia riparia</i> bank swallow	ABPAU08010	None	Threatened	G5	S2	
<i>Spinus lawrencei</i> Lawrence's goldfinch	ABPBY06100	None	None	G3G4	S3S4	
<i>Thamnophis gigas</i> giant gartersnake	ARADB36150	Threatened	Threatened	G2	S2	
<i>Trichocoronis wrightii</i> var. <i>wrightii</i> Wright's trichocoronis	PDAST9F031	None	None	G4T3	S1	2B.1

Record Count: 48



Plant List

Inventory of Rare and Endangered Plants

9 matches found. *Click on scientific name for details*

Search Criteria

California Rare Plant Rank is one of [1A, 1B, 2A, 2B], Found in Quads 3912128, 3912127, 3912126, 3912118, 3912117, 3912116, 3812188 3812187 and 3812186;

[Modify Search Criteria](#) [Export to Excel](#) [Modify Columns](#) [Modify Sort](#) [Display Photos](#)

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Astragalus tener var. ferrisiae	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	1B.1	S1	G2T1
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G3T2
Chloropyron palmatum	palmate-bracted bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct	1B.1	S1	G1
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Hibiscus lasiocarpus var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	1B.1	S2	G4T2
Layia septentrionalis	Colusa layia	Asteraceae	annual herb	Apr-May	1B.2	S2	G2
Navarretia leucocephala ssp. bakeri	Baker's navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G4T2
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	Asteraceae	annual herb	May-Sep	2B.1	S1	G4T3

Suggested Citation

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Questions and Comments

rareplants@cnps.org

TABLE B-1
SPECIAL-STATUS SPECIES CONSIDERED IN THE STUDY AREA

Scientific Name/ Common Name	Status (Federal/State/ CRPR)	Habitat Description/ Flowering Period	Potential to Occur in the Study Area*
Fish			
<i>Hypomesus transpacificus</i> Delta Smelt	T, CH/E/–	Open surface waters in the Delta. Seasonally in Suisun Bay, Carquinez Strait, and San Pablo Bay. Found in Delta estuaries with dense aquatic vegetation and low occurrence of predators.	None. The project is outside the geographic range of this species.
<i>Oncorhynchus mykiss irideus</i> pop. 11 Central Valley Steelhead DPS	T, CH/–/–	Requires cold freshwater streams with suitable gravel for spawning; rears in seasonally inundated floodplains, rivers, tributaries, and the Delta.	None. The collecting canals do not provide habitat for this species.
<i>Oncorhynchus tshawytscha</i> pop. 6 Central Valley Spring-Run Chinook Salmon ESU	T, CH/T/–	Requires cold freshwater streams with suitable gravel for spawning; rears in seasonally inundated floodplains, rivers, tributaries, and the Delta.	None. The collecting canals do not provide habitat for this species.
<i>Pogonichthys macrolepidotus</i> Sacramento Splittail	–/SSC/–	Endemic to the Central Valley. Spawns in freshwater in areas with submerged vegetation. Tolerant of moderate salinities. Adults are found primarily in the Delta and Suisun Bay and Marsh, but they have been found as far upstream as the Red Bluff Diversion Dam on the Sacramento River.	None. The collecting canals do not provide habitat for this species.
<i>Spirinchus thaleichthys</i> Longfin Smelt	C/T, SSC/–	Euryhaline, nektonic, and anadromous. Found in open waters of estuaries, mostly in the middle or bottom of the water column.	None. The project is outside the geographic range of this species. No habitat for this species is present in the study area.
<i>Thaleichthys pacificus</i> Eulachon	T, CH/–/–	Euryhaline, nektonic, and anadromous. Found in open waters of estuaries, mostly in the middle or bottom of the water column.	None. The project is outside the geographic range of this species. No habitat for this species is present in the study area.
Invertebrates			
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	T, CH/–/–	Found in vernal pools and swales of many sizes and depths with cool water and moderate to sparse vegetation. Typically associated with shorter-ponding vernal pool habitats.	None. No habitat for this species and no vernal pools are present in the study area.
<i>Desmocerus californicus dimorphus</i> Valley elderberry longhorn beetle	T, CH/–/–	Breeds in and forages exclusively on elderberry shrubs associated with riparian forest, elderberry savannas, and other Central Valley habitats. Occurs only in the Central Valley of California.	None. No elderberry shrubs are present in the study area.
<i>Lepidurus packardii</i> Vernal pool tadpole shrimp	E, CH/–/–	Found in cool-water vernal pools, ditches, stock ponds, and similar seasonal wetland and vernal pool habitats. Although it is often associated with larger vernal pools, this species can occur in pools of many sizes and depths as long as the hydroperiod is appropriate. Typically associated with longer-ponding vernal pool habitats.	None. No habitat for this species and no vernal pools are present in the study area.

TABLE B-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE STUDY AREA

Scientific Name/ Common Name	Status (Federal/State/ CRPR)	Habitat Description/ Flowering Period	Potential to Occur in the Study Area*
Amphibians			
<i>Ambystoma californiense</i> California tiger salamander	T, CH/T/–	Annual grassland and grassy understory of valley-foothill hardwood habitats in central and Northern California. Needs underground refuges and vernal pools or other seasonal water sources.	None. The project is outside the geographic range of this species.
<i>Rana boylei</i> Foothill yellow-legged frog	–/CT, SSC/–	Partly shaded, shallow streams, riffles, and pools with a rocky substrate in a variety of habitats.	None. This species is typically found in foothill habitats and is largely absent from lowland habitats, including the Central Valley. No habitat for this species is present in the study area.
<i>Rana draytonii</i> California red-legged frog	T, CH/SSC/–	Found in perennial or near-perennial lakes, ponds, reservoirs, slow-moving streams, marshes, bogs, and swamps in lowlands and foothills.	None. The species has been extirpated from much of its historic range in the Central Valley.
Reptiles			
<i>Emys marmorata</i> Western pond turtle	–/SSC/–	Found in slow-moving rivers, streams, lakes, ponds, wetlands, reservoirs, and brackish estuarine waters with deep pools and rocks, logs, and other exposed surfaces for basking.	High. Suitable habitat is present in the collecting canals at all of the pumping plant sites, and in the sump basin at Pumping Plant No. 3. During the March 2019 fieldwork, western pond turtles were observed in the collecting canals just outside the study area at Pumping Plant Nos. 2 and 3.
<i>Thamnophis gigas</i> Giant garter snake	T/T/–	Found in marshes, sloughs, drainage canals, irrigation ditches, rice fields, and slow-moving creeks.	High. Suitable habitat is present in the collecting canals at all of the pumping plant sites, and in the sump basin at Pumping Plant No. 3. Occurrence records in the CNDDDB overlap the project area at Pumping Plant Nos. 1 and 2 (CDFW, 2019d).
Birds			
<i>Agelaius tricolor</i> Tricolored blackbird	–/CE, SSC/–	Forms the largest breeding colonies of any North American landbird. Nesting area must be large enough to support a minimum colony of about 50 pairs. Requires open accessible water; protected nesting substrate, including either flooded or thorny/spiny vegetation; and suitable foraging space with adequate insect prey. Historically, most colonies were in freshwater marshes dominated by cattails and tules, but an increasing percentage have been reported in Himalayan blackberry and thistles.	None. No suitable nesting habitat for this species is present in the study area.
<i>Athene cunicularia</i> Burrowing owl	–/SSC/–	Found in grasslands, agricultural field margins, and ruderal habitat supporting short vegetation structure and abundant small-mammal burrows. Usually nests in old burrow of ground squirrel.	Low. Very few burrows were observed in the project site during fieldwork. Burrows in the grassland and ruderal habitat could provide habitat for this species.

TABLE B-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE STUDY AREA

Scientific Name/ Common Name	Status (Federal/State/ CRPR)	Habitat Description/ Flowering Period	Potential to Occur in the Study Area*
Birds (cont.)			
<i>Buteo swainsoni</i> Swainson's hawk	–/T/–	Found in cottonwood riparian forest and isolated trees in open grasslands adjacent to streams and agricultural crops for foraging.	Moderate. The only tree in the study area is a small black walnut located at Pumping Plant No. 3. This tree provides marginal habitat because of its small size and location next to areas frequently disturbed by human activity. No evidence of past raptor nesting in this tree was observed during fieldwork. Nesting habitat is present adjacent to the study area in mature riparian trees along the Sutter Bypass; adjacent agricultural fields provide suitable foraging habitat.
<i>Charadrius montanus</i> Mountain plover	–/SSC/–	Winters regionally in short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms.	None. No habitat for this species is present in the study area.
<i>Coccyzus americanus occidentalis</i> Western yellow-billed cuckoo	T/E/–	Inhabits extensive deciduous riparian thickets or forests that feature dense, low-level or understory foliage and abut slow-moving watercourses, backwaters, or seeps. Willow is almost always a dominant component of the vegetation. In the Sacramento Valley, also uses adjacent orchards, especially of walnut. Nests typically in sites with at least some willow, dense low-level or understory foliage, high humidity, and wooded foraging spaces exceeding 300 feet in width and 25 acres in area.	None. No nesting habitat for this species is present in the study area. Adjacent riparian habitat in the Sutter Bypass is narrow and not suitable for this species.
<i>Elanus leucurus</i> White-tailed kite	–/FP/–	Nesting habitat includes oak woodlands and isolated trees along marsh edges and field margins. Foraging habitat includes grasslands, meadows, and agricultural fields.	Moderate. The only tree in the study area is a small black walnut located at Pumping Plant No. 3. This tree provides marginal habitat because of its small size and location next to areas frequently disturbed by human activity. No evidence of past raptor nesting in this tree was observed during fieldwork. Nesting habitat is present adjacent to the study area in mature riparian trees along the Sutter Bypass; adjacent agricultural fields provide suitable foraging habitat.
<i>Grus Canadensis tabida</i> Greater sandhill crane	–/T,FP/–	Breeds in wetland habitats in northeastern California. Winters primarily in the Sacramento and San Joaquin Valleys from Tehama County south to Kings County in annual and perennial grassland habitats, moist croplands with rice or corn stubble, and open, emergent wetlands. Prefers relatively treeless plains. Migrates over much of interior California, passing southward in September and October, and passing northward in March and April.	None. The study area is outside the breeding range of this species.

TABLE B-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE STUDY AREA

Scientific Name/ Common Name	Status (Federal/State/ CRPR)	Habitat Description/ Flowering Period	Potential to Occur in the Study Area*
Birds (cont.)			
<i>Laterallus jamaicensis coturniculus</i> California black rail	–/T,FP/–	Inhabits emergent wetlands in the Sierra Nevada foothills, and freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays.	None. No habitat for this species is present in the study area.
<i>Melospiza melodia</i> Song sparrow “Modesto population”	–/SSC/–	Emergent freshwater marshes dominated by tule (<i>Scirpus</i> spp., <i>Schoenoplectus</i> spp.) and cattail (<i>Typha</i> spp.) as well as riparian willow (<i>Salix</i> spp.) thickets. Also nests in riparian forests of valley oak (<i>Quercus lobata</i>) with a sufficient understory of blackberry (<i>Rubus</i> spp.), along vegetated irrigation canals and levees, and in recently planted valley oak restoration sites. Primary habitat requirement is moderately dense vegetation to supply cover for nest sites, a source of standing or running water, semi-open canopies to allow light, and exposed ground or leaf litter for foraging.	Moderate. No emergent marshes or riparian forests are present in the study area. The Himalayan blackberry brambles along the collecting canal at Pumping Plant No. 2 provide marginal nesting habitat for this species.
<i>Riparia riparia</i> Bank swallow	–/T/–	Vertical banks and cliffs with fine-textured/sandy soils near streams, rivers, lake, and ocean bluffs.	None. No habitat for this species is present in the study area.
<i>Vireo bellii pusillus</i> Least Bell’s vireo	E, CH/E/–	Rare, local, summer resident below about 2,000 feet in willows and other low, dense valley foothill riparian habitat and lower portions of canyons mostly in San Benito and Monterey Counties; in coastal Southern California from Santa Barbara County south; and along the western edge of deserts in desert riparian habitat. Uses thickets of willow and other low shrubs for nesting and roosting.	None. No habitat for this species is present in the study area. The study area is outside the current known range of this species.
Mammals			
<i>Antrozous pallidus</i> Pallid bat	–/SSC/–	Roosts in crevices in rocky outcrops; caves; mines; trees (including bole cavities of oaks, exfoliating ponderosa pine and valley oak bark, deciduous trees in riparian areas, and fruit trees in orchards); and various human structures, such as bridges, barns, and vacant buildings.	Moderate. Suitable roosting habitat is present in the abandoned control buildings at Pumping Plant Nos. 1 and 2.
<i>Dipodomys californicus eximius</i> Marysville California kangaroo rat	–/SSC/–	In California, occurs from the Oregon border south to San Francisco Bay, and in the Sacramento Valley and Sierra Nevada foothills from El Dorado County north. Usually found in annual grassland habitat, but also occurs in clearings in mixed chaparral habitat on the lower slopes of foothills. Burrows excavated in loose soils, often at the bases of shrubs or edges of rocks. Sands or silts required for dust bathing.	None. No habitat for this species is present in the study area. The study area is outside the current known range of this species.
<i>Lasiurus blossevillei</i> Western red bat	–/SSC/–	Roosts in the foliage of willow, cottonwood, and sycamore trees in riparian areas. Less commonly roosts in orchards.	None. No habitat for this species is present in the study area.

TABLE B-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE STUDY AREA

Scientific Name/ Common Name	Status (Federal/State/ CRPR)	Habitat Description/ Flowering Period	Potential to Occur in the Study Area*
Plants			
<i>Astragalus tener</i> var. <i>ferrisiae</i> Ferris's milk-vetch	—/—/1B.1	Annual herb found in vernal mesic meadows and seeps, and subalkaline flats in valley and foothill grasslands, typically on adobe soil. Occurs from 7 to 250 feet elevation. April through May.	Low. The alkaline soils in grassland habitat at Pumping Plant Nos. 2 and 3 provide limited habitat.
<i>Atriplex cordulata</i> var. <i>cordulata</i> Heartscale	—/—/1B.2	Annual herb found in saline or alkaline soils of chenopod scrub, meadows and seeps, and sandy valley and foothill grassland from 0 to 1,840 feet elevation. April through October.	Low. The alkaline soils in grassland habitat at Pumping Plant Nos. 2 and 3 provide limited habitat.
<i>Chloropyron palmatum</i> Palmate-salty bird's-beak	E/E/1B.1	Annual hemiparasitic herb found in alkaline soils of chenopod scrub and valley and foothill grassland from 16 to 510 feet elevation. Usually found on Pescadero Silty Clay. Known from 25 occurrences in Alameda, Colusa, Fresno, Glenn, Madera, San Joaquin, and Yolo Counties. Three of these occurrences are presumed extirpated, and five are considered possibly extirpated. May through October.	None. The study area is outside the known current geographic distribution of this species.
<i>Delphinium recurvatum</i> Recurved larkspur	—/—/1B.2	Perennial herb found in alkaline soils of chenopod scrub, cismontane woodland, and valley and foothill grassland from 10 to 2,600 feet elevation. March through June.	Low. The alkaline soils in grassland habitat at Pumping Plant Nos. 2 and 3 provide limited habitat.
<i>Extriplex joaquinana</i> San Joaquin spearscale	—/—/1B.2	Annual herb found in alkaline soils of chenopod scrub, meadows and seeps, playas, and valley and foothill grassland from 3 to 2,740 feet elevation. April through October.	Low. The alkaline soils in grassland habitat at Pumping Plant Nos. 2 and 3 provide limited habitat.
<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i> Woolly rose-mallow	—/—/1B.2	Emergent perennial rhizomatous herb found in freshwater marshes and swamps often in riprap on sides of levees from 0 to 390 feet elevation. June through September.	High. Occurrence records in the CNDDDB overlap the study area at Pumping Plant No. 1, and occur in the Sutter Bypass adjacent to Pumping Plant No. 2 (CDFW, 2019d). Suitable habitat is present in the sump basin at Pumping Plant 3 and in the collecting canals throughout the study area.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i> Coulter's goldfields	—/—/1B.1	Annual herb found in coastal salt marshes and swamps, playas, and vernal pools from 3 to 4,000 feet elevation. February through June.	None. No suitable habitat is present in the study area.
<i>Layia septentrionalis</i> Colusa layia	—/—/1B.2	Annual herb found in sandy, serpentinite soils of chaparral, cismontane woodland, and valley and foothill grassland from 300 to 3,600 feet elevation. April through May.	None. No serpentinite soils are present in the study area. The study area is below the known elevation range of this species.

TABLE B-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE STUDY AREA

Scientific Name/ Common Name	Status (Federal/State/ CRPR)	Habitat Description/ Flowering Period	Potential to Occur in the Study Area*
Plants (cont.)			
<i>Lepidium latipes</i> var. <i>heckardii</i> Heckard's pepper-grass	—/—/1B.2	Annual herb found in alkaline flats of valley and foothill grasslands from 6 to 650 feet elevation. March through May.	Low. The alkaline soils in grassland habitat at Pumping Plant Nos. 2 and 3 provide limited habitat.
<i>Monardella venosa</i> Veiny monardella	—/—/1B.1	Annual herb found in heavy clay soil of cismontane woodland and valley and foothill grassland from 200 to 1,350 feet elevation. Known from four occurrences, two of which are possibly extirpated. May through July.	None. This species is presumed extirpated from Sutter County (CNPS, 2019). The study area is below the known elevation range of this species.
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i> Baker's navarretia	—/—/1B.1	Annual herb found in vernal pools and swales on adobe or alkaline soils in cismontane woodland, lower montane coniferous forest, meadows and seeps, and valley and foothill grassland from 15 to 5,700 feet elevation. April through July.	None. No vernal pools or swales are present in the study area.
<i>Pseudobahia bahiifolia</i> Hartweg's golden sunburst	E/E/1B.1	Annual herb found in clay, often acidic soil of cismontane woodland and valley and foothill grassland from 50 to 500 feet elevation. Predominantly occurs on the northern slopes of knolls, but also occurs along shady creeks or near vernal pools. Known from 27 occurrences, many of which are very small, in Fresno, Madera, Merced, Stanislaus, and Tuolumne Counties. Presumed extirpated from Yuba County. March through April.	None. No suitable soils are present in the study area. The study area is outside the known geographic distribution of this species.
<i>Puccinellia simplex</i> California alkali grass	—/—/1B.2	Annual herb found in alkaline, vernal mesic, sinks, flats, and lake margins in chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools from 5 to 3,050 feet elevation. March through May.	Low. The alkaline soils in grassland habitat at Pumping Plant Nos. 2 and 3 provide limited habitat.
<i>Sagittaria sanfordii</i> Sanford's arrowhead	—/—/1B.2	Emergent perennial rhizomatous herb found in assorted shallow, slow-moving freshwater marshes and swamps, ponds, and ditches from 0 to 2,130 feet elevation. May through October, and sometimes November.	Moderate. Suitable habitat is present in the sump basin at Pumping Plant No. 3 and in the collecting canals throughout the study area.
<i>Trichocoronis wrightii</i> var. <i>wrightii</i> Wright's trichocoronis	—/—/2B.1	Annual herb found in alkaline soils in meadows and seeps, marshes and swamps, riparian forest, and vernal pools within mudflats of vernal lakes, drying river beds, and alkali meadows. This species occurs from 15 to 1,430 feet elevation. Known from nine occurrences in Colusa, Merced, Riverside, San Joaquin, and Sutter Counties. Presumed extirpated from Colusa, San Joaquin, and Sutter Counties. May through September.	None. No suitable habitat is present in the study area. This species is considered to be extirpated from Sutter County (CNPS, 2019).

TABLE B-1 (CONTINUED)
SPECIAL-STATUS SPECIES CONSIDERED IN THE STUDY AREA

Scientific Name/ Common Name	Status (Federal/State/ CRPR)	Habitat Description/ Flowering Period	Potential to Occur in the Study Area*
NOTES:			
CNDDB = California Natural Diversity Database; CRPR = California Rare Plant Rank; Delta = Sacramento–San Joaquin Delta; DPS = distinct population segment; ESU = evolutionarily significant unit.			
Federal Designations		State Designations	
E =	Endangered	E =	Endangered
T =	Threatened	T =	Threatened
P =	Proposed	C =	Candidate
D =	Delisted	SSC =	Species of special concern
CH =	Critical habitat has been designated for this species.	FP =	Fully protected

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Appendix C

Plant Species Observed in the Study Area

TABLE C-1
PLANT SPECIES OBSERVED IN THE STUDY AREA

Scientific Name*	Common Name	*
Amaranthaceae		
<i>Amaranthus albus</i>	Tumbleweed	I
Asteraceae		
<i>Anaphalis margaritacea</i>	Pearly everlasting	N
<i>Centaurea solstitialis</i>	Yellow star-thistle	I
<i>Lactuca serriola</i>	Prickly lettuce	I
<i>Senecio vulgaris</i>	Common groundsel	I
<i>Silybum marianum</i>	Milk thistle	I
<i>Sonchus asper</i> subsp. <i>asper</i>	Prickly sow thistle	I
<i>Sonchus oleraceus</i>	Common sow thistle	I
Azollaceae		
<i>Azolla filiculoides</i>	Mosquito fern	N
Brassicaceae		
<i>Brassica rapa</i>	Turnip, field mustard	I
<i>Raphanus sativus</i>	Radish	I
Chenopodiaceae		
<i>Chenopodium murale</i>	Pigweed, goosefoot	I
Cyperaceae		
<i>Schoenoplectus</i> sp.	Naked-stemmed bulrush	—
<i>Schoenoplectus acutus</i> var. <i>occidentalis</i>	Common tule	N
Fabaceae		
<i>Medicago polymorpha</i>	California burclover	I
Geraniaceae		
<i>Erodium botrys</i>	Storksbill, filaree	I
<i>Geranium dissectum</i>	Cranesbill, geranium	I
<i>Geranium molle</i>	Cranesbill, geranium	I
Juglandaceae		
<i>Juglans hindsii</i>	Northern California black walnut	N
Juncaceae		
<i>Juncus mexicanus</i>	Mexican rush	N
Marsileaceae		
<i>Pilularia americana</i>	Pilularia	N
Onagraceae		
<i>Epilobium ciliatum</i>	Willowherb	N

TABLE C-1 (CONTINUED)
PLANT SPECIES OBSERVED IN THE STUDY AREA

Scientific Name*	Common Name	*
Poaceae		
<i>Elymus ponticus</i>	Tall wheat grass	I
<i>Festuca</i> sp.	Fescue, rye grass	–
<i>Phalaris aquatica</i>	Harding grass	I
Polygonaceae		
<i>Rumex crispus</i>	Curly dock	I
Rosaceae		
<i>Rubus armeniacus</i>	Himalayan blackberry	I
Scrophulariaceae		
<i>Verbascum blattaria</i>	Moth mullein	I
<i>Verbascum thapsus</i>	Woolly mullein	I
Verbenaceae		
<i>Verbena bonariensis</i>	Vervain	I
NOTES:		
*N = Native; I = Invasive; – = Unknown		

Appendix D

Wildlife Species Observed in the Study Area

TABLE D-1
WILDLIFE SPECIES OBSERVED IN THE STUDY AREA

Family	Scientific Name	Common Name
Birds		
Anatidae	<i>Branta canadensis</i>	Canada goose
Ardeidae	<i>Ardea alba</i>	great egret
Ardeidae	<i>Ardea herodias</i>	great blue heron
Cathartidae	<i>Cathartes aura</i>	turkey vulture
Charadriidae	<i>Charadrius vociferus</i>	killdeer
Hirundinidae	<i>Hirundo rustica</i>	barn swallow
Hirundinidae	<i>Petrochelidon pyrrhonota</i>	cliff swallow
Icteridae	<i>Agelaius phoeniceus</i>	red-winged blackbird
Icteridae	<i>Sturnella neglecta</i>	western meadowlark
Passerellidae	<i>Zonotrichia atricapilla</i>	golden-crowned sparrow
Phalacrocoracidae	<i>Phalacrocorax auritus</i>	double-crested cormorant
Rallidae	<i>Fulica americana</i>	American coot
Tyrannidae	<i>Sayornis nigricans</i>	black phoebe
Mammals		
Mustelidae	<i>Lontra canadensis</i>	northern river otter
Leporidae	<i>Sylvilagus audubonii</i>	Audubon's cottontail
Reptiles		
Emydidae	<i>Emys marmorata</i>	western pond turtle
Emydidae	<i>Trachemys scripta elegans</i>	red-eared slider

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Appendix E

Study Area Photographs



Sutter Bypass Pumping Plant Rehabilitation Project

Photo 1

Abandoned control building and concrete lined inlet basin at Pumping Plant No. 1. March 14, 2019



Sutter Bypass Pumping Plant Rehabilitation Project

Photo 2

Pumping Plant No. 1 and adjacent collecting canal.
March 14, 2019



Sutter Bypass Pumping Plant Rehabilitation Project

Photo 3

Abandoned control building and concrete lined inlet basin at Pumping Plant No. 2. March 14, 2019



Sutter Bypass Pumping Plant Rehabilitation Project

Photo 4

Collecting canals at Pumping Plant No. 2.
March 14, 2019



Sutter Bypass Pumping Plant Rehabilitation Project

Photo 5

View across proposed staging area toward
Pumping Plant No. 2. March 14, 2019



Sutter Bypass Pumping Plant Rehabilitation Project

Photo 6

Pumping Plant No. 3, proposed staging area, and
adjacent collecting canals. October 18, 2018



Sutter Bypass Pumping Plant Rehabilitation Project

Photo 7

Sump where the inlet basin previously occurred at the removed abandoned control building at Pumping Plant No. 3. The single tree in the study area is visible in the background. March 14, 2019



Sutter Bypass Pumping Plant Rehabilitation Project

Photo 8

View of the location where the sump will be partially filled and the levee reconstructed at Pumping Plant No. 3. October 18, 2018