Hood Abandoned Pipes and Conduit Removal Project

Initial Study/
Proposed Mitigated Negative Declaration

California Department of Water Resources
1516 Ninth Street
Sacramento, CA 95814

May 2022

Initial Study
Hood Abandoned Pipes and Conduit Removal

1. Proposed Project Title	Hood Abandoned Pipes and Conduit Removal Project
2. Lead Agency Name and Address	CA Department of Water Resources 1516 Ninth Street Sacramento, California 95814
3. Contact Person and Phone Number	Clay Booher Senior Engineer Clay.Booher@water.ca.gov (916) 902-6859
4. Proposed Project Location	The Proposed Project site is located at the southern edge of Sacramento County in the community of Hood, California at 38.3673 N and -121.5200 W
5. Proposed Project Sponsor's Name and Address	CA Department of Water Resources 3500 Industrial Blvd., Second Floor Sacramento, CA 95691
6. General Plan Designation	N/A – State-owned Water Conveyance System
7. Zoning	Public Land
8. Description of Proposed Project	DWR is proposing to conduct the Proposed Project to remove remnants of an abandoned fish-screen testing facility. This proposed removal will restore the levee to its original contour and grade prior to the installation of the facility and reduce the risk of catastrophic flooding for the people and property in the California Central Valley. The Proposed Project will also comply with the California Water Code, Division 5, Part 4, Title 23 of the California Code of Regulations Section 124. The Proposed Project consists of

	full removal of the remaining portions of the fish-screen testing facility. This Proposed Project will take approximately 3 months to construct and is scheduled to occur in the late summer to mid-fall of 2022.
9. Surrounding Land Uses and Setting	The general Proposed Project area is comprised of a graveled levee crown, the levee bank containing riprap and riparian habitat, and a portion of the Sacramento River.
10. Other Public Agencies Whose Approval is Required	US Army Corps of Engineers, Central Valley Flood Protection Board, Central Valley Regional Water Quality Control Board, CA Department of Fish and Wildlife, Office of Historic Preservation
11. Have California Native American Tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation?	Yes, consultation was requested, and the process is described in more detail in the Tribal Cultural Resources section of the initial study.

MITIGATED NEGATIVE DECLARATION

PROPOSED PROJECT: Hood Abandoned Pipes and Conduit Removal Project

LEAD AGENCY: California Department of Water Resources (DWR)

PROPOSED PROJECT LOCATION: Hood Abandoned Pipes and Conduit Removal Project (Proposed Project) site is located at the southern edge of Sacramento County in the community of Hood, California at 38.3673 N and -121.5200 W and located in the Courtland CA 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle, directly west of Section 14, Township 6N Range 4E. The Proposed Project site is adjacent to California State Route 160 (SR 160) on the east bank of the Sacramento River. The Proposed Project is partially within the limits of the Sacramento River because of construction required between the levee crown and ordinary high-water mark.

PROPOSED PROJECT DESCRIPTION: DWR is proposing to conduct the Proposed Project to remove remnants of an abandoned fish-screen testing facility. This proposed removal will restore the levee to its original contour and grade prior to the installation of the facility and reduce the risk of catastrophic flooding for the people and property in the California Central Valley. The Proposed Project will also comply with the California Water Code, Division 5, Part 4, Title 23 of the California Code of Regulations that protects floodways and flood control structures, specifically Section 124, which establishes the requirement to remove and/or abate abandoned pipelines and conduits when practical, within the limits of, or which can affect, any authorized flood control project or any adopted plan of flood control. The Proposed Project consists of full removal of the remaining portions of the fish-screen testing facility, which includes removal of above-ground remnant facility features, excavation of remnant pipes and septic facilities within the levee crown and waterside of the levee, fill and compaction of excavated features, and recontouring and armoring (installation of rock-slope protection) the waterside of the levee. This Proposed Project will take approximately 3 months to construct and is scheduled to occur in the late summer to mid-fall of 2022.

DETERMINATION: An initial study was prepared to determine if the Proposed Project has the potential to cause significant environmental impacts. Based on the analysis conducted in the initial study, it has been determined that implementing the Proposed Project will not have a significant impact on the environment. The adoption and implementation of mitigation measures will ensure the avoidance and minimization of cultural resources.

MITIGATION MEASURES: The following mitigation measures will be implemented as part of the Proposed Project to avoid, minimize, rectify, reduce or eliminate, or compensate for potentially significant environmental impacts. Implementation of these mitigation measures would reduce the potentially significant environmental impacts of the Proposed Project to less than significant levels:

Mitigation Measure CUL-1: Worker Response to Undiscovered Historical Resources, Archaeological Resources, and Tribal Cultural Resources

Should any unexpected cultural resources be exposed during project activities, all work would temporarily stop in the immediate vicinity (e.g., 100 feet) of the find until it can be evaluated by 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, and an appropriate plan of action can be determined in consultation with DWR.

If any suspected Tribal cultural resources (TCRs) are discovered during ground-disturbing construction activities, all work shall cease within 100 feet of the find, or an agreed-upon distance based on the project area and nature of the find. A Tribal Representative from a California Native American Tribe that is traditionally and culturally affiliated with a geographic area shall be immediately notified and shall determine if the find is a TCR (Public Resources Code Section 21074). The Tribal representative will make recommendations for further evaluation and treatment as necessary.

Mitigation Measure CUL-2: Presence of Archaeological Monitor during Proposed Project activities

An archaeological monitor shall be present when ground disturbance is occurring in areas that have previously been determined to be sensitive to potential archaeological resources. Likewise, a representative of any consulting Tribe shall be present for all activities within areas of concern/interest to that Tribe. The monitors shall have access to the removed material and excavation areas to determine if any cultural or Tribal resources are present (see Mitigation Measure CUL-1).

Mitigation Measure CUL-3: Avoidance of Potential Impacts to Undiscovered Burials

Should human remains be discovered during the course of project activities, all work will stop immediately in the vicinity (e.g.,100 feet) of the finds until they can be verified. The coroner will be contacted in accordance with Health and Safety Code Section 7050.5(b). Protocol and requirements outlined in Health and Safety Code Sections 7050.5(b) and 7050.5(c) as well as Public Resources Code Section 5097.98 will be followed.

Mitigation Measure CUL-4: Worker Awareness to Undiscovered Historical Resources, Archaeological Resources, and Tribal Cultural Resources

Prior to project construction, a qualified archaeologist in coordination with culturally affiliated California Native American Tribes shall develop a cultural resources awareness and sensitivity training program for all construction and field workers involved in project ground-disturbing activities. The program shall include a presentation

that covers, at a minimum, the types of cultural resources common to the area, regulatory protections for cultural resources, and the protocol for unanticipated discovery of archaeological resources (see Mitigation Measure CUL-1). Personnel working in areas of project ground-disturbing activities shall receive the training prior to working in these areas.

Clay Booher _____ 3/30/2022

Clay Booher
Senior Engineer, WR
California Department of Water Resources
Division of Integration Science and Engineering

Date

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Acronyms and Abbreviations

2012 Plan	Climate Action Plan-Phase I: Greenhouse Gas Emissions Reduction Plan
AB	Assembly Bill
AMM	avoidance and minimization measure
BMP	best management practice
CAA	Clean Air Act
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CMP	corrugated metal pipe
CNEL	common noise equivalent level
CNNDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CVFPB	Central Valley Flood Protection Board
CVRWQCB	Central Valley Regional Water Quality Control Board
Delta	Sacramento-San Joaquin Delta
DPS	distinct population segment
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESU	evolutionary significant unit
GHG	greenhouse gas
LRA	local responsibility area
iPaC	Information for Planning and Consultation
km	kilometer
mtCO2e	metric tons of carbon dioxide equivalent

NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OHWM	ordinary high-water mark
ppt	parts per thousand
Proposed Project	Hood Abandoned Pipes and Conduit Removal Project
RBDD	Red Bluff Diversion Dam
RCEM	Roadway Construction Emissions Model
SGP	Sacramento General Plan
SLF	Sacred Lands File
SMAQMD	Sacramento Metropolitan Air Quality Management District
SR 160	California State Route 160
SSHCP	South Sacramento Habitat Conservation Plan
SVAB	Sacramento Valley Air Basin
SWPPP	stormwater pollution prevention plan
TAC	toxic air contaminant
TCR	Tribal cultural resource
Update 2020	Greenhouse Gas Emissions Reduction Plan Update 2020
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Surve
UST	underground storage tank
WEAP	Worker Environmental Awareness Program

1.0 INTRODUCTION AND PROJECT DESCRIPTION

1.1 Location

The Hood Abandoned Pipes and Conduit Removal Project (Proposed Project) site encompasses an approximate 1.25-acre area adjacent to and within the east side of the Sacramento River and California State Route 160 (SR 160) on the Sacramento River Levee (levee), and bank of the Sacramento River located in the Courtland, California, 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle, directly west of Section 14, Township 6N Range 4E (Figure 1.).

The Proposed Project footprint consists of three major sections:

- The levee crown, which consists of a graveled levee road and a graveled parking lot. The parking lot has frequent human activity and is currently used by the adjacent property for access and parking.
- The waterside bank of the levee, which extends from the hinge point of the levee crown and extends to the ordinary high-water mark (OHWM) of the Sacramento River. The levee bank is comprised of riprap and riparian habitat made up of trees, shrubby vegetation, and ruderal vegetation.
- The Sacramento River, which begins at the OHWM and extends into the riverbed, and is presumed to consist of riprap and soft, sandy, silty sediments.

Figure 1. Proposed Project Location

1.2 Background

A fish-screen testing facility was constructed at the Proposed Project site by the California Department of Water Resources (DWR) in the 1970s. The intent of the facility was to test fish screen cleaning engineering technologies. The fish-screen testing facility was constructed under permit numbers 9635, 9635-A, and 9635-B, issued by the Reclamation Board in the 1970s.

Permit No. 9635: The original application to construct a fish screen cleaning facility, filed by DWR, was approved by the Reclamation Board under permit number 9635 on May 9, 1974. Per the application, the facility consisted of the following components:

- Pump platform and associated piles.
- Pump discharge pipe with a walkway and associated piles.
- Test facility consisting of a head tank, flumes, assorted pipes, return water pipe, and electrical service.

Permit No. 9635 - A: This DWR application was approved by the Reclamation Board on March 13,1975. Per the application, two trailer houses (trailers) intended for personnel and laboratory testing were placed on the crown of the levee near the waterward shoulder of the levee. A 1,000-gallon septic tank and leach field were installed near the theoretical levee section landward of the trailers. Per the applications, all facilities except for the leach field were located within the theoretical levee section. The application indicated the construction of sewer lines between the trailers and septic tank. Also, all asbestos cement pipes were replaced with welded steel pipes as a condition to build the fish-screen testing facility.

Permit No. 9635 - B: This DWR application was approved by the Reclamation Board on April 2, 1975. This application was to obtain approval of revised plans for the construction of the fish-screen testing facility and associated structures.

In the late 1980s, the fish-screen testing facility was abandoned. A portion of the above-ground facility, including the trailers, was removed, and an attempt to grout the underground pipes was made. Today, the discharge pipe and remanent fish release structure, grouted underground pipes, septic facilities, and leech field remain in place.

July 10, 2018. The Central Valley Flood Protection Board (CVFPB) issued a Notice to Comply to DWR to repair two sinkholes on the levee crown resulting from water entry within the levee through the open pipes left from the abandoned fish-screen testing facility.

July 23, 2018. DWR conducted investigations to determine the full extent of underground pipes, conduits, and utilities at the location. A review of the as-built

drawings, along with ground-penetrating radar and electromagnetic survey results, confirmed the locations of the known underground features and located smaller conduits not shown in the facility as-built drawing.

October 4, 2018. DWR initially issued a two-phase Removal and Repair Plan to CVFPB to fully remove the facility remains. CVFPB approved the plan.

July 6, 2020. DWR was notified by CVFPB of the immediate need to prevent water infiltration into the pipes that caused the sinkholes.

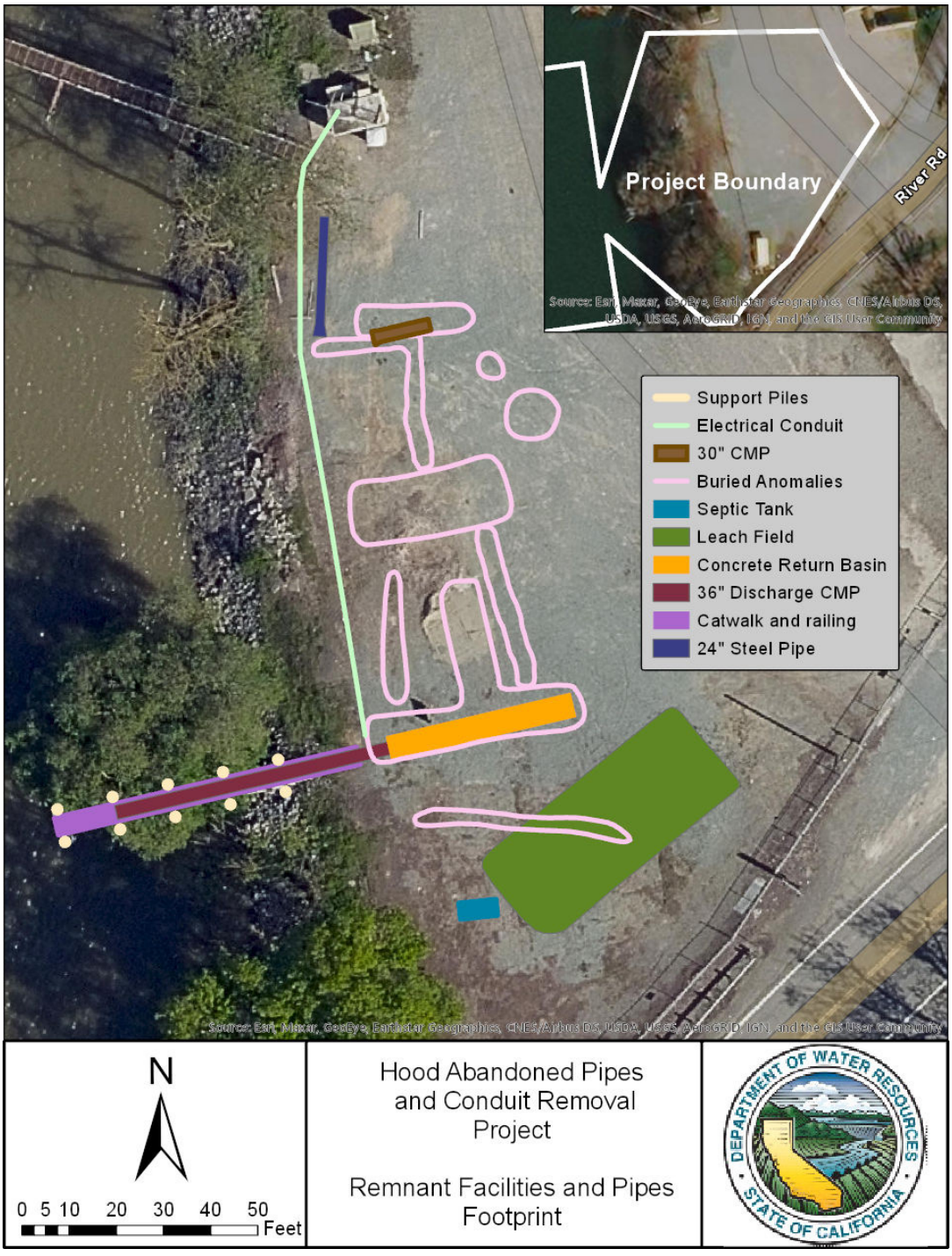
September 2, 2020. DWR issued a three-phase Revised Removal and Repair Plan to the CVFPB to fully remove the facility remains.

Phase 1. Site investigation. Completed October 24, 2019.

Phase 2. Sinkhole repairs and capping of the pipes. Completed November 19, 2020.

Phase 3. Remnant facilities and pipe removal. The Proposed Project is discussed and evaluated in this document. Proposed to begin in 2022.

Figure 2. Excavation Footprint of (Buried and Surface) Remnant Facilities and Pipes



1.3 Purpose

CVFPB is the regulatory agency responsible for ensuring that State Plan of Flood Control systems such as levees and other facilities are operated and maintained in a manner that reduces the risk of catastrophic flooding for the people and the property in the California Central Valley. DWR is required to comply with the California Water Code, Division 5, Part 4, Title 23 of the California Code of Regulations that protects floodways and flood control structures, specifically Section 124, which establishes the requirement to remove and/or abate abandoned pipelines and conduits when practical, within the limits of, or which can affect, any authorized flood control project or any adopted plan of flood control.

The July 10, 2018, Notice to Comply issued to DWR by the CVFPB, prompted DWR to conduct investigations to determine the full extent of the structural remains within the levee that have the potential to compromise the integrity of the levee. Upon completion of investigations, DWR prepared a three-phase Removal and Repair Plan, which was approved by the CVFPB on October 1, 2020, to fully remove remnants of the abandoned fish-screen testing facility. The intent of the Proposed Project is to restore the levee to its original contour and grade prior to the installation of the fish-screen testing facility and compacted in compliance with the California Water Code, Division 5, Part 4, Title 23 of the California Code of Regulations to protect the public and property from catastrophic flooding.

1.4 Regulatory requirements, permits, and approvals

DWR has the responsibility to ensure that all requirements of the California Environmental Quality Act (CEQA) and other applicable regulations are met. Other permitting requirements and approvals for the Proposed Project include:

- U.S. Army Corps of Engineers (USACE), Clean Water Act, Rivers and Harbor Act Section 10 Permit.
- Central Valley Regional Water Quality Control Board (CVRWQCB), Clean Water Act, Section 401 Water Quality Certification.
- California Department of Fish and Wildlife (CDFW), Fish and Game Code Section 1602 Lake and Streambed Alteration Agreement.
- Section 106 National Historic Preservation Act (NHPA) consultation, State Historic Preservation Office.

In addition to the permits and approvals identified in the list above, CVFPB must approve design plans and authorize the work. The Proposed Project is required and

permitted by CVFPB. The original permits required construction of the fish-screen testing facility, specifically permits 9635, 9635-A, and 9635-B as described above. CVFBP permits included Section 408 permission from USACE. Due to the Proposed Project is a component of existing CVFPB permits, no additional coordination or consultation with USACE pursuant to Section 408 of the Rivers and Harbors Act is required for the Proposed Project.

1.5 PROPOSED PROJECT DESCRIPTION

1.5.1 Proposed Project overview

The Proposed Project footprint (Figure 3) encompasses an approximately 1.25-acre area and consists of removing remaining portions of the fish-screen testing facility. Proposed Project activities include:

- Excavation of buried remnant pipes and septic facilities within the levee crown (Photos 6 and 7).
- Removal of above-ground facility features, including the catwalk structure (Photos 1 through 4).
- Removal of 10 steel support piles from the levee crown and waterside of the levee (Photos 1, 3, and 4).
- Rehabilitation of the levee crown, including placement of fill, compaction, and placement of aggregate base.
- Reconstruction of the waterside of the levee, including recontouring and placement of fabric and rip rap above the OHWM (Photo 5).
- Staging and access via land and water with barge access.

The Proposed Project will take approximately three months to complete and is scheduled to occur late summer to mid-fall of 2022. This timeline is subject to the Proposed Project's permit approvals and may occur in subsequent years.

Photo 1. *Catwalk, catwalk railing, 36-inch corrugated metal pipe discharge pipe and support piles. Looking northwest from levee crown. December 16, 2021*

Photo 2. *Catwalk and catwalk railing to be removed on waterside. Looking west from the levee crown. December 16, 2021*

Photo 3. *Catwalk, catwalk railing, 36-inch corrugated metal pipe discharge pipe and support piles to be removed on waterside. Looking southwest from the levee crown. December 16, 2021*

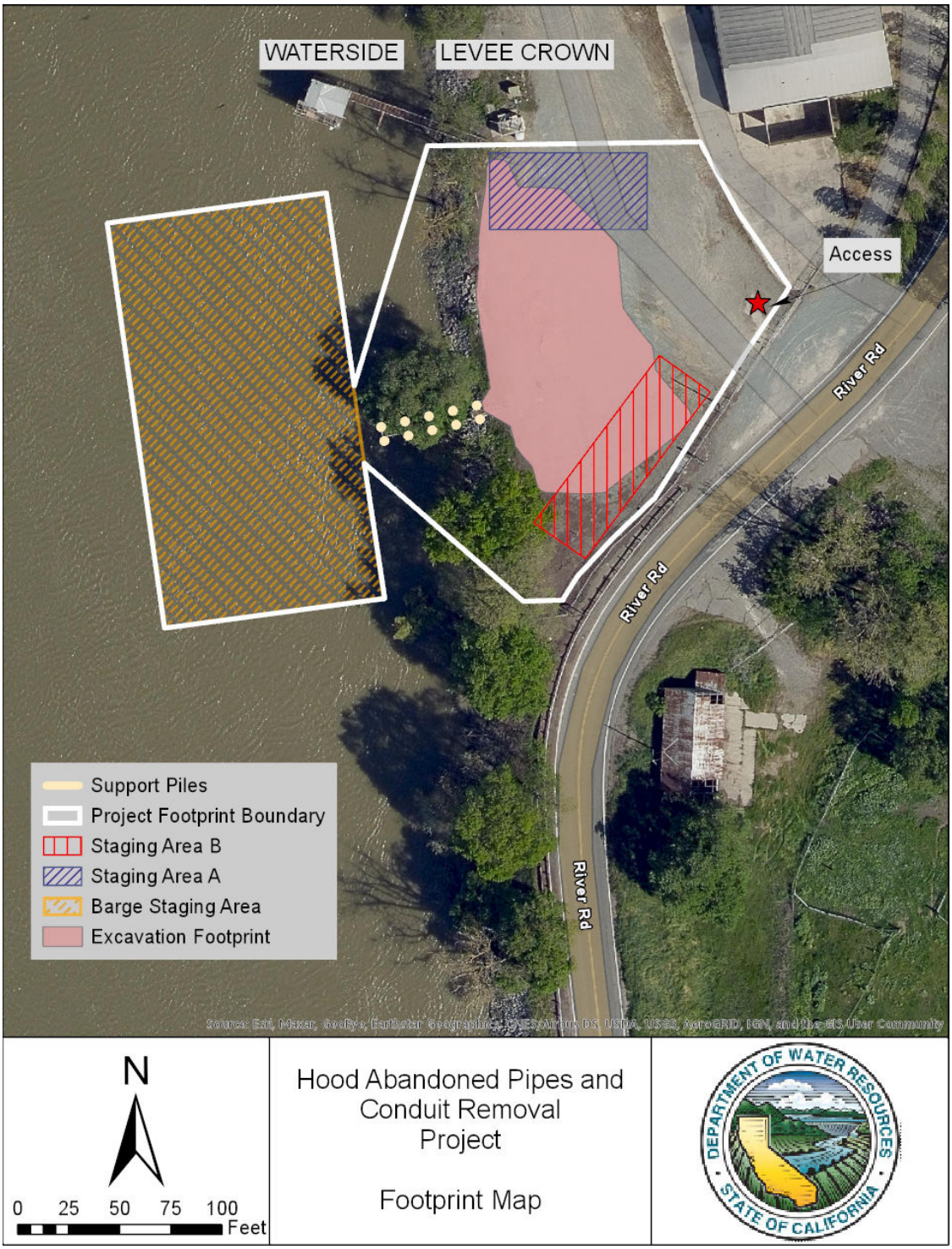
Photo 4. *Support piles and 36-inch corrugated metal pipe discharge pipe to be removed on the waterside. Looking south from the levee crown. December 16, 2021*

Photo 5. *Removal of 36-inch corrugated metal pipe discharge pipe and where recontouring of waterside levee activities, including the placement of fabric and rip rap. Facing northeast toward levee and levee crown. December 16, 2021*

Photo 6. *Access gate and levee crown. Facing west toward levee and Sacramento River. December 16, 2021*

Photo 7. *Levee crown. Facing west toward Sacramento River. December 16, 2021*

Figure 3. Proposed Project Footprint



1.5.1.1 Proposed Project Activities

Temporary and permanent impacts of Proposed Project activities are summarized in Table 1.

Table 1. Summary of Proposed Temporary and Permanent Impacts

Project Feature	Temporary Impact (Acres)	Permanent Impact (Acres)	Feature Description
Riprap	-	0.0126	Placement of geotextile fabric and riprap to stabilize levee bank after excavation.
Catwalk, Railing, and Support Pile Removal	0.00011	-	The catwalk is above the water surface and begins at levee crown with piles that are partially submerged. Both features are located on the waterside. The impact area reflects the support pile removal from levee bank and riverbed.
Barge Staging Area	0.49	-	The impact area reflects the maximum amount of space needed for barge access and staging to waterside project features.
Excavation Footprint	0.24	-	Includes buried anomalies, septic system and leach field facilities, concrete return basin, and pipe excavation and removal. Acreage includes partial acreage of staging areas A and B.
Staging Area A	0.04	-	Located within the levee crown area, Staging Area A partially overlaps the excavation footprint. When excavation occurs, Staging Area A will be 0.04 acre. After excavation is complete, Staging Area A will extend (overlap excavation area) to 0.07 acre.
Staging Area B	0.03	-	Located within the levee crown area, Staging Area B partially overlaps the excavation footprint. When excavation occurs, Staging Area B will be 0.03 acre. After excavation is complete, Staging Area B will extend (overlap excavation area) to 0.07 acre.

Project Feature	Temporary Impact (Acres)	Permanent Impact (Acres)	Feature Description
Total Construction Access Area	0.44	-	All areas within the Project Footprint Boundary (Figure 3), waterside, and levee crown area, that are required for access to Proposed Project features. Acreage does not include excavation footprint, support piles, or staging.
Total Impacts	1.2401	0.0126	Total temporary and permanent impact areas.
Total Project Footprint Boundary Acreage	1.25		Total impact area.

1.5.1.2 Excavation and Disposal

The Proposed Project includes excavation and disposal of the remaining existing fish-screen testing facility. The excavation amounts and depths of old fish facility components of the levee crown described herein are approximate and are informed by surveys that were completed for the Proposed Project (Table 3). Individual components of the old fish facility are described to the best of DWR's knowledge (Table 2).

Table 2. Quantities of Material to be Excavated and Disposed

Project Component	Levee Crown		Near Water		Notes
	Cubic Yards	Truck Trips	Cubic Yards	Truck Trips	
Septic System and Leach Field	300	30	0	0	Assumed to include contaminated soil. Includes leach field excavation.
Pipe and Conduit	120	12	5	1	Assumed no crushing/flattening of CMPs
Concrete Return Basin[1]	25	3	0	0	Assumed 6” thick walls and 6” foundation. Basin is 40’ x 5’.
Asphalt Pad/Debris Pile[2]	<10	1	0	0	
Buried Anomalies[3]					This is indeterminate but an estimate has been included under “Pipe and Conduit” and “Concrete, Asphalt, and Miscellaneous Steel Excavation”
Catwalk and railing	0	0	<20	2	Assumed 65’x4’ catwalk based off drawings
Above-ground Discharge CMP[4]	0	0	35	4	Assumed no crushing/flattening of CMPs
Catwalk Support Piles Extraction (includes bracing)	0	0	70	7	Assumed 45’ avg pile depth 9” avg diameter

Project Component	Levee Crown		Near Water		Notes
	Cubic Yards	Truck Trips	Cubic Yards	Truck Trips	
Concrete, Asphalt, and Miscellaneous Steel Excavation	200	20	0	0	
General Excavation	1,650	165	50	5	Leach field excavation is quantified under “Septic Systems and Leach Field”

Table 2 notes: CMP = corrugated metal pipe
[1]Concrete return basin quantified in concrete, asphalt, and miscellaneous steel excavation and disposal.
[2]Asphalt debris quantified in concrete, asphalt, and miscellaneous steel excavation and disposal.
[3]Buried anomalies quantified in pipe excavation and disposal, and concrete, asphalt, and miscellaneous steel excavation and disposal.
[4]Buried discharge CMP quantified in pipe excavation and disposal. Above-ground CMP is exposed below the catwalk.

1.5.1.3 Levee Crown Excavation

The following section describes all excavation work proposed for the levee crown. Proposed Project features to be excavated and removed include a septic system and leach field, piping and conduit, a concrete return basin, buried anomalies, and tree stumps (Figure 2).

The total excavation area on the levee crown will be approximately 0.24 acre (10,130 square feet). Table 3 includes excavation areas, depths, and volume calculations for levee crown excavation activities. Prior to excavation, all areas will be cleared and grubbed. Once the excavation is complete, all excavated areas will be backfilled with a mix of native and imported earthfill from an approved borrow location, compacted to a minimum of 95 percent or greater relative compaction using vibratory compaction, and capped with a three-inch layer of aggregate base. All earthfill will meet CVFPB Title 23 requirements.

Water trucks will be used for dust abatement during Proposed Project activities. Water will be obtained on-site from Sacramento River or from nearby landowners with approval.

Clearing, Grubbing, and Tree Stump Removal

Prior to the removal of all facility components, the entire Proposed Project area on the levee crown will be cleared and grubbed. Additionally, tree stumps within the levee crown will be excavated and backfilled.

Septic System and Leach Field

The septic system and leach field will be excavated, and all concrete, metal, waste, and soils will be disposed of offsite. The leach field measures 50 feet by 25 feet (1,250 square feet) and the soil and other materials excavated are assumed to be potentially hazardous. Additionally, high-density polyethylene (HDPE) pipe associated with the septic system will be removed. Once removed, all materials will be properly disposed of in accordance with all applicable laws and regulations.

Pipe and Conduit

Miscellaneous pipe and conduit will be excavated and removed from the levee crown. These components are expected to contain corrugated metal pipe (CMP), steel pipe, CMP risers, electrical wires and conduits, and a concrete return basin. Asbestos cement pipes are not anticipated, as CVFPB permit 9635-A states that the original asbestos cement pipes were removed and replaced with welded steel pipes in 1975. Anticipated depths of the removal trenches will be between 2 feet and 10 feet below the current grade, with deeper excavation depths anticipated on the southern end of the Proposed Project site. The approximate widths of the removal trenches are between 10 feet and 24 feet wide. The total length of the pipes to be removed will be approximately 555 linear feet and can be broken down as follows:

- Approximately 140 feet of 36- and 24-inch CMP.
- Approximately 25 feet of 24-inch steel pipe.
- Approximately 250 feet of 6-inch metal pipe.
- Approximately 120 feet of 3-inch electrical conduit and wires.
- Approximately 20 feet of 4-inch steel pipe.

Concrete Return Basin

A concrete return basin will be demolished and excavated from the levee crest. The basin measures approximately 5 feet by 40 feet, extends to a depth of 8.5 feet, and its upper extent is just below the existing gravel.

Buried Anomalies

Various metal and non-metal anomalies were detected on the ground-penetrating radar surveys. It is assumed these areas may include pipes, utility lines, pieces of old approach flume, foundations, and miscellaneous steel. The anomalies are expected to be eight feet or less below the ground surface. These areas will be excavated and

hauled offsite and properly disposed of in accordance with all applicable laws and regulations.

Table 3. Summary of Levee Crown Excavation Areas, Depths, and Volume Calculations

Project Excavation Area	Excavation Size, Surface Area	Maximum Excavation Depth	Excavation Volume (Cubic Yards)
Septic System and Leach Field	50ft x 25ft, (1,250 square feet)	6.5 feet	295
Pipe and Conduit	10ft x 24ft, (240 square feet)	10 feet	90
Concrete Return Basin	5ft x 40ft, (200 square feet)	8.5 feet	65
Potential Buried anomalies and Tree stump clearing	Included in levee crown yardage below	-	0
Levee Crown (total)	0.25-acre (10,250 square feet)	8 feet	1,700

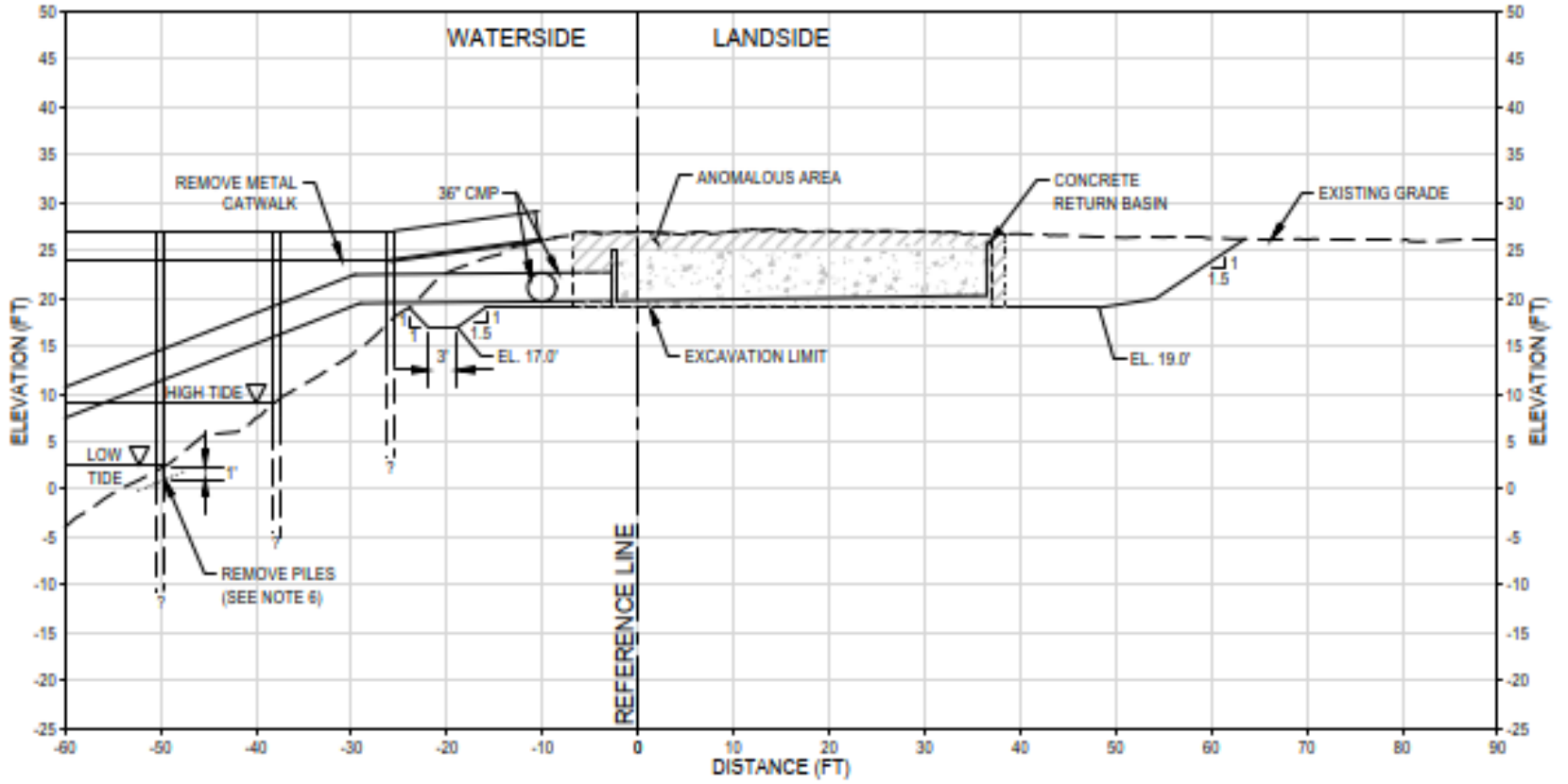
1.5.1.4 Waterside Levee Excavation

The waterside of the levee in the Proposed Project area begins at the waterside edge of the levee shoulder (hinge point) and extends down the levee slope into the Sacramento River. This location is indicated by the reference line in Figure 4. Table 4 includes excavation areas, depths, and volume calculations for waterside excavation activities. Proposed Project activities occurring on the waterside of the levee include the removal of all buried pipes and conduits, steel piles, the catwalk structure, and support piles within and over the levee slope and water.

All in-water work will occur during the in-water work window, between August 1 and October 31. In-water work is considered to be any activity that occurs below the OHWM, depicted in Figure 4 as “high tide” occurring at the 9-foot elevation mark. For the Proposed Project, in-water work includes the removal of 10 steel support piles.

To access the waterside levee, a crane-mounted barge and flat barge may be used to remove piles and a portion of the catwalk structure. The crane-mounted barge will support a crawler crane and vibratory pile extractor, or equivalent equipment to be used to remove in-water materials and steel piles. The barges will be approximately 200 feet and 150 feet in length, respectively. It will take two tugboats a maximum of approximately 4.5 days to transport the barges approximately 75 miles (one way) each to the Proposed Project site. After arrival, the barges and tugboats will be anchored to the riverbed on the south side of the catwalk using spuds; barges and tugboats are anticipated to be anchored for approximately two consecutive days. The crawler crane and vibratory pile extractor will run for eight hours per day during daylight hours to remove the in-water materials. The removed materials will be placed on the flat barge to be removed off-site and properly disposed of in accordance with all applicable laws and regulations after completion of removal activities. In-water work is anticipated to take approximately two weeks; but the barges will only be in use for approximately two consecutive days.

Figure 4. Cross Section of Excavation, before work



C1 CROSS SECTION AT STA 11+00

C-05 EXCAVATION PLAN

Catwalk and railing

The catwalk and associated railing will be removed from the waterside of the levee. The catwalk is approximately 4 feet wide and extends 65 feet from the edge of the levee crown into the Sacramento River (Figure 4). The catwalk and railing will be removed using the crawler crane and placed either on the barge or in the designated staging areas prior to being properly disposed of off-site.

Discharge corrugated metal pipe (CMP)

The 36-inch discharge pipe (depicted in Figure 4 as 36-inch CMP) embedded within the waterside of the levee and extending into the Sacramento River will be removed using the crawler crane. The total length of the pipe is approximately 65 feet, with 20 feet embedded within the levee. Approximately 20 feet by 8 feet of levee crown excavation is necessary to remove the discharge pipe. Removal of remnant pipe will be done by a crawler crane. The discharge pipe will be placed either on the barge or in the designated staging areas prior to being properly disposed of off-site.

Catwalk Support Piles Excavation

Ten nine-inch piles that currently support the catwalk will be removed from the waterside of the levee. Two piles are located above the OHWM on the levee, and eight piles are located below the OHWM in the Sacramento River. These piles extend approximately 45 feet below the water's surface and will be removed using a vibratory hammer. Should any pile break at or near the substrate during removal, the pile will remain in place and be cut using (1) if above the water, a cutter attached to an excavator staged on a barge, the cut will be made at least one foot below the mudline and (2) divers will weld a brace onto the pile and then extract the pile using the crane. Each individual pile has an area of approximately 0.5 square foot, which totals 5 square feet for the 10 piles combined.

Table 4. Summary of Waterside Excavation

Project Component Removed	Removal Size, Surface Area	Maximum Excavation Depth	Excavation Volume Calculations (Cubic Yards)
Catwalk and Railing	65 feet x 4 feet	No excavation activities required.	0
Discharge CMP	65 feet (20 feet subsurface) x 3 feet	8 feet	17.8
Catwalk Support Piles Removal	9-inch diameter (πr^2) x 10 piles= 5 square feet	No excavation activities required.	0

1.5.1.5 Disposal of Materials

All excavated material, old facility components, or other trash removed from the site will be disposed of at State- and county-approved disposal facilities. All excavated material will be tested and disposed of per State guidelines. There are three State- and county-approved recycle and solid waste disposal facilities: Waste Management, Inc. (WMI) – Sacramento Recycling Center and Transfer Station, City of Sacramento Solid Waste, and L and D Landfill; within 35 miles (one-way) of the Proposed Project site that will be used for disposal. If any material is determined to be hazardous, it will be disposed of at a hazardous waste landfill, the closest being Kettleman Hills Landfill, 202 miles away from the Proposed Project, a 404-mile round trip.

1.5.1.6 Reconstruction

Once all fish-screen testing facility features have been excavated from the levee crown and waterside slope, the excavated areas will be reconstructed to restore the levee to its original contour and grade prior to the installation of the facility. Additionally, rock-slope protection will be placed along the waterside levee within the Proposed Project footprint to further reinforce the levee.

Reconstruction of Excavated Areas

All excavated areas within the levee crown and waterside of the levee will be filled with earthfill material, compacted to specification, and restored to original contour and grade prior to the installation of the fish-screen testing facility (Figure 5). The earthfill material

will be natural or processed material and will be free of organic matter, petroleum hydrocarbons, pesticides, excessive heavy metals, and other deleterious substances. The expected volume of imported earthfill is approximately 1,950 cubic yards, which will be approximately 200 truck trips. The fill will be obtained from a commercial source within 30 miles (one-way) of the Proposed Project site.

Prior to placing earthfill, the material will be moisture conditioned at the earthfill source location or at the Proposed Project site to ensure thorough penetration and uniform distribution in the material, and to ensure 95 percent relative compaction will be achieved.

All areas affected by excavation and fill on the levee crown will be capped with a minimum of three inches of aggregate base and compacted. The volume of the aggregate base is approximately 100 cubic yards, which is approximately 10 truck trips. The material will be obtained from a commercial source within 30 miles (one way) of the Proposed Project site.

Waterside Levee Slope Reconstruction

After all remnant fish-screen testing facility components are removed from the waterside of the levee, the riverbank will be reconstructed to bring the bank back to its intended condition and grade prior to the construction of the facility.

Once the excavated areas of the waterside levee have been filled and compacted, the riverbank will be recontoured and armored with geotextile fabric and two to three feet of riprap (or armoring rock) where the discharge pipe is located within the levee. The armoring rock will cover approximately 550 square feet above the OHWM. The rock armoring will be placed between 17 feet and 25 feet in elevation and will maintain a 1:1 slope (Figure 5a). The rock will be placed from the land side via excavator. The rock will be obtained from a commercial supplier within 30 miles of the Proposed Project site. The average size of the armoring rock will be two to three feet in diameter and the volume will be 50 cubic yards, which is approximately 10 truck trips. The tree stump removal (discussed in Section 1.5.1.3) will be conducted prior to armoring rock placement.

Figure 5. Final Site Condition

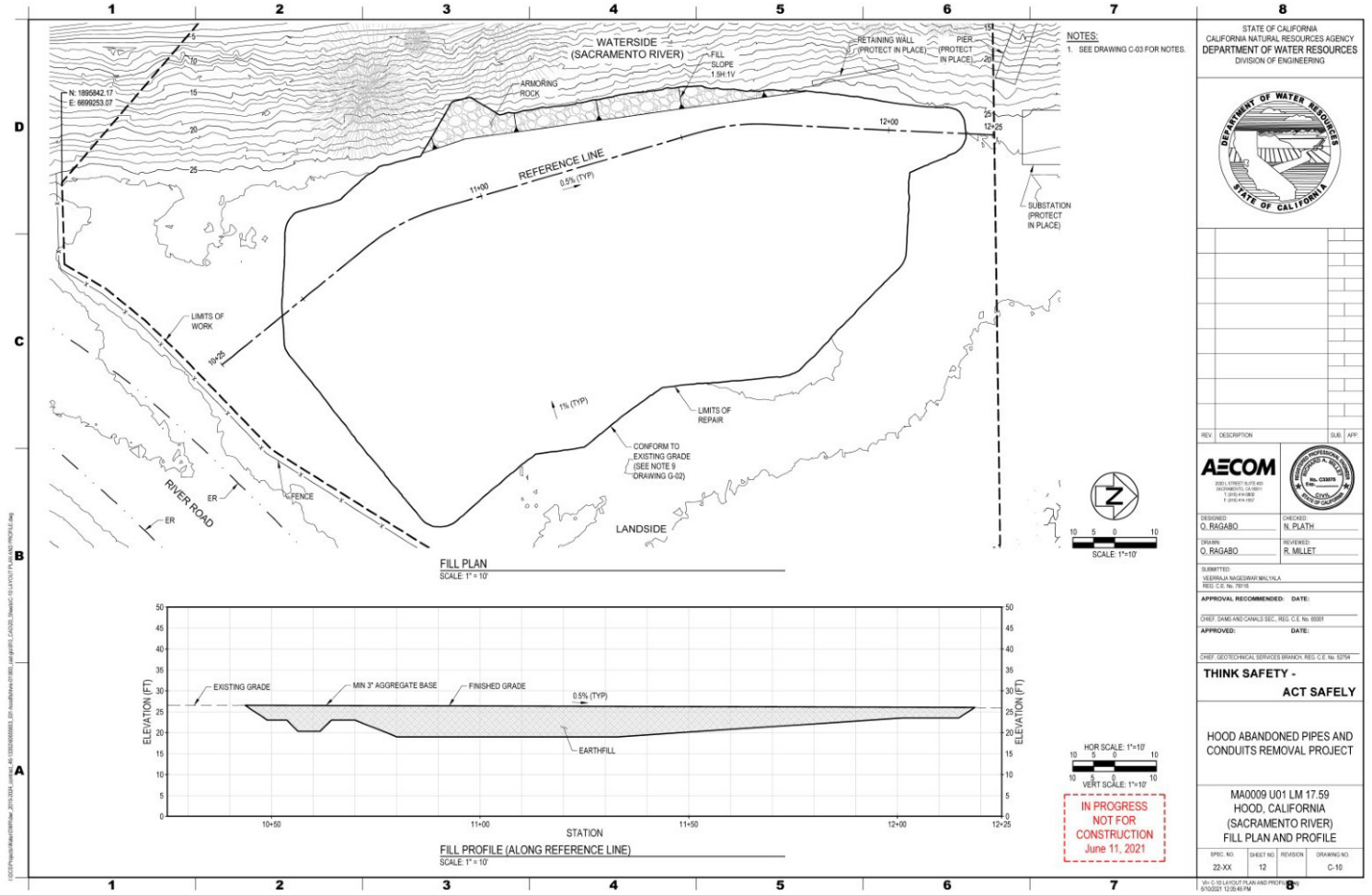
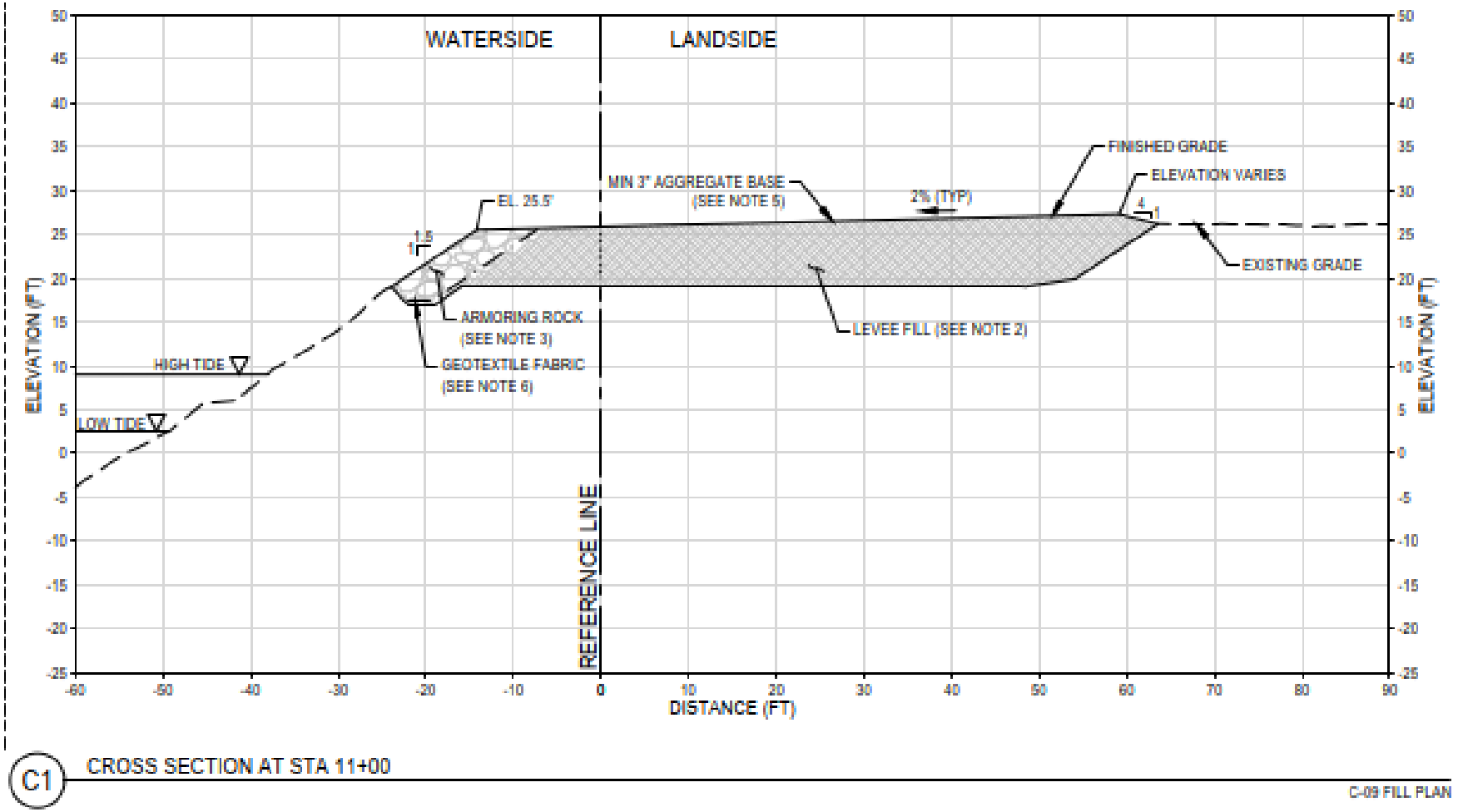


Figure 5a. Cross Section of Excavation, after work



1.5.1.7 Proposed Project Site Access and Staging

Proposed Project Access

The Proposed Project site will be accessed via existing roads off SR 160, Hood Franklin Road, and the Sacramento River. The majority of Proposed Project activities will take place on the levee crown where crew and equipment will access via SR 160 and Hood Franklin Road. To remove waterside features, the crew and equipment will utilize barges to access the Proposed Project site via tugboats on the Sacramento River.

Proposed Project Staging and Stockpile Areas

Two staging and stockpile areas are planned within the Proposed Project footprint: one at the northern end and one at the southern end of the Proposed Project site. Both staging and stockpile areas will be approximately 2,000 square feet. After the leach field is excavated and backfilled, this area will become part of the southern staging and stockpile area. The entire Proposed Project area is enclosed with a chain-linked fence. In addition to the existing fence, temporary fencing will be installed on the northern edge of the Proposed Project site to protect the work area and the public (Figure 3).

1.5.1.8 Equipment

The following equipment is expected to be utilized during construction of the Proposed Project:

- Low-boy tractor trailer.
- Skid-steer loader.
- Front end loader.
- Crawler crane.
- Vibratory pile extractor equipment.
- Compaction roller.
- Compactor.
- Crane barge.
- Flat barge.
- Shear/excavator.
- Saw/crane.
- Bucket truck.
- Hauling trucks.
- Water trucks.
- Pickup/utility trucks/passenger vehicles.

1.5.1.9 Construction Schedule

The construction schedule and sequencing are presented in Table 5.

Table 5. Tentative Construction Sequence and Schedule

Activity	Duration	Start Date
Mobilization	1 week	August 2022
Excavation & Waterside	2 weeks	September 2022
Fill, Site Reconstruction	6 weeks	September 2022
Demobilization	2 days	October 2022

1.5.2 Best Management Practices

Best Management Practice (BMP)-1: Air Quality Control Pan – This plan reflects DWR's Greenhouse Gas Emission Reduction Plan recommendations and the Basic Construction Emissions Control Practices (BCECP) set by the Sacramento Metro Air Quality Management District. Efforts to reduce air pollution and shall include, but not be limited to, the following:

a) Fugitive dust control. Efforts to control fugitive dust include watering, applying chemical suppressants, minimizing areas of disturbance, covering surfaces, or other favorable dust control measures. Measures listed below shall be implemented as reasonable or necessary to prevent fugitive dust from leaving the worksite.
    a. Ensure equipment is properly maintained.
    b. Construct graded surfaces as early in the Proposed Project as possible.
    c. Limit construction vehicle speeds to no greater than 15 mph.
    d. Cover haul vehicles in a manner to ensure compliance with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
    e. Install wheel washers, track plates, or other similar methods where vehicles exit the construction site onto paved roads.
    f. Apply water and other dust palliatives as frequently as necessary to control fugitive dust.
b) Minimize construction-related vehicle emissions. Emission measures shall include, but are not limited to:
    a. Compile a complete list of self-propelled off-road diesel vehicles 25 horsepower or greater equipment to be mobilized to the site, the

equipment's California Air Resources Board (CARB) equipment identification number, current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation (California Code of Regulations, Title 13, sections 2449 and 2449.1), and CARB tier designation.

b. Prohibit trucks and construction vehicles from idling for more than five minutes when not in use.
c. Maintain all construction equipment in proper working condition and perform preventive maintenance. Required maintenance shall include, but not be limited to, compliance with all manufacturer's recommendations, proper upkeep and replacement of mufflers and filters, and maintenance of all engine and emissions systems in proper operating condition. Maintenance schedules and service requirements shall be defined and implemented for each piece of construction equipment.
d. Reference and acknowledge that Best Available Control Technology will be followed, where applicable or feasible, including, but not limited to:
    a. Install high-pressure injectors.
    b. Use ultra-low-sulfur diesel fuel in all stationary and mobile equipment.
    c. Substitute electrical equipment for gas or diesel-powered equipment.
    d. Substitute clean natural gas (CNG)-powered vehicles.
    e. Substitute gasoline-powered equipment equipped with catalytic converters with electric-powered equipment.
e. Implement a tire-inflation program on the worksite to ensure that equipment tires are correctly inflated. Check tire inflation when the 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. Vehicles used for hauling materials off-site shall be checked at least weekly for correct tire inflation.
f. Handle, load, unload, or transport materials to and on the worksite using equipment with on-road rated engines, to the extent feasible.
g. Minimize the amount of construction equipment operating during any given time period. This could include scheduling construction truck trips to reduce peak emissions, adjusting time periods for the construction workday, and phasing of construction activities.
h. Limit deliveries of materials and equipment to off-peak traffic congestion hours to the extent feasible. For deliveries to Proposed Project sites where the haul distance exceeds 100 miles and a heavy-duty Class 7 or Class 8 semi-truck or 53-foot or longer box-type trailer is used for hauling, a U.S. Environmental Protection Agency SmartWay certified truck shall be used to the maximum extent feasible.

i. Ensure that all feasible efforts have been made for providing an electrical service drop to the construction site for temporary construction power. When generators must be used, alternative fuels such as propane or solar shall be used to power generators, to the extent feasible.
j. Use only coatings and solvents on the Proposed Project that are consistent with the local air quality control district or air quality management district rules, CARB, and all other applicable laws and regulations.

BMP-2: Compliance with Construction General Permit – The Proposed Project will comply with the construction general permit via preparation of a stormwater pollution prevention plan (SWPPP) or by obtaining a National Pollutants Discharge Elimination System (NPDES) Low Erosivity Waiver Certification. If a SWPPP is required:

a) A SWPPP shall be prepared by a Qualified SWPPP Developer and implemented by a Qualified SWPPP Practitioner or Qualified SWPPP Developer.
b) A SWPPP preparation and implementation shall follow the provisions of the *California Stormwater Quality Association – 2015 Construction Best Management Practices Handbook* and SWPPP preparation manuals as well as the requirements of Order No. 2009-0009-DWQ, and associated amendments (Order No. 2010-0014-DWQ and order No. 2012-0006-DWQ), or any more recent version of the construction general permit.

BMP-3: Fire Prevention and Control Plan – This plan shall comply with the provisions of the California Fire Code Chapter 33, and shall include appropriate preventative measures, emergency procedures to be followed, current emergency telephone numbers, and an area map. At a minimum, the plan shall address the following items, if applicable:

a) Procedures and policies for preventing fires occurring on-site during construction.
b) Procedures and policies for controlling any worksite fires, access for firefighting, and other related fire prevention and control procedures developed in consultation with fire protection agencies.
c) Materials susceptible to spontaneous ignition shall be stored in an approved disposal container.
d) No fires will be allowed at the worksite. Smoking will be allowed only in areas designated for smoking, which shall be in enclosed vehicles or in areas cleared of vegetation.
e) Appropriate fire suppression equipment shall be maintained at the worksite including a water truck or a fire truck with a water tank of at least

3,000-gallon capacity. The truck's water tank shall be maintained full of water and shall not be used as a source of construction water without prior written approval. Fire extinguishers, shovels, and other firefighting equipment shall be inventoried and available at worksites and on construction equipment. Each vehicle on the construction worksite and right of way that is larger than an automobile or pickup truck shall be equipped with a minimum 20-pound (or two 10-pound) fire extinguisher(s) and a minimum of 5 gallons of water in a firefighting apparatus (e.g., bladder bag).

f) A sealed fire toolbox shall be maintained and accessible in the event of a fire. This fire toolbox is required to contain: two backpack pump-type fire extinguishers filled with water, two axes, two McLeod fire tools, and four shovels.

g) Internal combustion engines are required to be equipped with spark arrestors. Motorized construction equipment shall be located such that the exhausts do not discharge against combustible materials. Equipment shall be fueled while in non-operation. Fuel shall only be stored in approved areas.

h) One or more chain saws of at least 3.5 horsepower with a cutting bar at least 20 inches in length shall be made available at the site.

i) Gasoline-powered construction equipment with catalytic converters shall be equipped with shielding or other acceptable fire prevention features.

j) The contractor contact with local firefighting agencies shall be maintained for updates on fire conditions, and such fire conditions shall be communicated to on-site employees daily during times of elevated fire danger.

k) Vehicles shall be restricted to Proposed Project right of way unless otherwise allowed for fire control procedures.

l) If a fire should start, fire protection agencies shall be notified immediately and all reasonably necessary and prudent fire suppression activities shall commence, including, but not limited to, use of extinguishers, water, and chainsaws.

BMP-4: Noise Abatement Plan – Noise shall be minimized as much as reasonably possible. At a minimum, the following measures shall be followed, if applicable:

a) Preventive maintenance including practicable methods and devices to control, prevent, and minimize noise.

b) All equipment, fixed or mobile, shall be equipped with properly operating and maintained exhaust and intake mufflers, consistent with manufacturers' standards.

c) Locating and placing noise barriers around stationary equipment.

d) Rerouting truck traffic to avoid or reduce noise impacts.

e) Scheduling construction activities with the most intense noise activities to occur when ambient noise is also at a high level at that location.

f) Impact tools used for construction shall be hydraulically or electrically powered whenever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used. External jackets on the tools shall be used wherever feasible. Quieter procedures, such as the use of drills rather than impact tools, shall be used whenever feasible.

BMP-5: Construction Debris Recycling and Diversion Plan – The generation of construction and demolition waste shall be minimized to reduce pollution through recycling of materials. The plan shall include the following:

a) Identify the construction and demolition waste materials to be diverted from disposal by efficient usage, recycling, reuse on the Proposed Project or salvage for future use or sale.

b) Identify whether construction and demolition waste materials will be sorted on site (source-separated) or bulk mixed (single stream).

c) Identify diversion facilities where construction and demolition waste material will be taken.

d) Develop and implement a waste management training plan for all workers at the jobsite.

e) Reuse or recycle all rocks and associated vegetation and soils resulting primarily from land clearing.

f) The contractor will follow appropriate disposal techniques if vegetation and soil are contaminated.

BMP-6: Green House Gas Emissions – According to DWR's Greenhouse Gas Emission Reduction Plan, all DWR projects shall implement the following BMPs into the project design:

a) Evaluate project characteristics, including location, project workflow, 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.

b) Evaluate the feasibility and efficacy of performing on-site material hauling with trucks equipped with on-road engines.

c) 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.

d) Evaluate the feasibility and efficacy of producing concrete on-site and specify that batch plants be set up on-site or as close to the site as possible.

e) Limit deliveries of materials and equipment to the site to off-peak traffic congestion hours.

f) 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.

g) Implement tire inflation program on job site ensure that equipment tires are correctly inflated. Check tire inflation when the 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.

h) Develop a project-specific rideshare program to encourage carpools, shuttle vans, transit passes, and secure bicycle parking for construction worker commutes.

i) Use a SmartWay27 to the maximum extent feasible for deliveries to project sites, where the haul distance exceeds 100 miles and a heavy-duty Class 7 or Class 8 semi-truck, or 53-foot or longer box-type trailer, is used for hauling.

j) 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.

1.5.3 Avoidance and Minimization Measures

Avoidance and Minimization Measures (AMM) BIO-1: Avoid and minimize potential impacts to wildlife

To minimize the potential impacts to special-status wildlife that may occur within the Proposed Project area, the following measures will be implemented:

a) A qualified wildlife biologist will conduct pre-construction surveys no more than two weeks prior to the start of construction for any special-status wildlife that have the potential to occur within the project area.
b) Prior to the start of construction, known sensitive areas adjacent to the project site will be marked with high-visible flagging for avoidance.
c) Prior to beginning work, a Worker Environmental Awareness Program (WEAP) training will be provided by a qualified biologist. All personnel who will be at the worksite during construction activities are required to complete the training prior to beginning work at the site. The training will be given at or near the worksite. The WEAP training will consist of briefing sessions developed by biologists, archaeologists, and others familiar with environmental, cultural, and Tribal resources at the worksite. At a minimum, the environmental portion of the training shall include a description and discussion of the importance of avoiding impacts to special-status wildlife, the general measures that are being implemented to conserve these species as they relate to the Proposed Project and Proposed Project area, and procedures to follow should they encounter wildlife during work. A refresher WEAP training will be provided if needed to present additional topics pertaining to the above subjects.
d) A biological monitor will be on-site during initial ground-disturbing activities and as needed during project construction at the discretion of the lead biologist.
e) The qualified biologist shall be notified if wildlife is encountered in the Proposed Project site. Wildlife shall be given the opportunity to leave the Proposed Project site on their own accord during construction activities and construction personnel shall avoid harming wildlife within the construction site. Construction personnel shall not move, handle, or harass wildlife on site. If federally or State-listed species are observed on-site, all work will halt within the immediate vicinity and the animal will be allowed to leave the Proposed Project area on their own. In the event wildlife is harmed or killed, the qualified biologist shall be notified of the incident immediately.
f) Any observations of federally or State-listed species will be reported to the U.S. Fish and Wildlife Service (USFWS) and CDFW within one working day of the observation.
g) Project activities shall be performed during daylight hours.
h) All trash shall be properly contained, removed from the worksite, and disposed of properly to prevent attracting wildlife.
i) All fueling and maintenance of vehicles or other equipment shall occur on established roads and at least 50 feet away from any on-site water feature.

j) Motorized equipment will be kept clean and in good working condition and will not be left idling while not in use for more than 5 minutes.
k) Absorbent materials will be available on-site. Any accidental leaks or spills will be immediately cleaned up and equipment will be checked and fixed to prevent further leaks or spills.
l) Erosion control measures shall be the appropriate type for the site conditions and will not harm or entrap wildlife. No monofilament waddles will be used.

AMM BIO-2: Avoid and minimize impacts to special-status plants

To minimize the potential impacts to special-status plants that may occur within the Proposed Project area, the following measure will be implemented:

A qualified biologist will conduct surveys in the appropriate seasons for any special-status plant species with the potential to occur within the project area. Surveys will follow the methods described in *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (California Department of Fish and Wildlife 2018) and *CNPS Botanical Survey Guidelines* (California Native Plant Society 2001). If any special-status plants are identified, they will be flagged and avoided.

AMM BIO-3: Avoid and minimize impacts to nesting birds

To minimize and avoid potential impacts to nesting birds (non-raptor) protected by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Section 3503 that may occur within the Proposed Project area, the following measures will be implemented.

a) If construction activities occur between February 1 to August 31, a pre-construction survey will be conducted by a qualified biologist within 500 feet of the Proposed Project area for actively nesting birds a maximum of 72 hours prior to the onset of Proposed Project activities. The qualified biologist(s) must, at a minimum, have experience conducting surveys to identify the specific species and associated habitat that could occur on site.
b) If any active nests are identified within or adjacent to the Proposed Project area, a buffer will be put in place to ensure that no-take (as defined by MBTA), and no take, possession, or needless destruction (as prohibited under the California Fish and Game Code) occurs. The dimension of the buffer zone will be determined by a qualified biologist, and will depend on the proposed activity, habitat type, and species present, in accordance with USFWS's Nationwide Conservation Measures.

AMM BIO-4: Avoid and minimize impacts to raptors

To minimize and avoid the potential impacts on raptors that may occur within the Proposed Project area, the following measures will be implemented:

a) If construction activities occur between February 1 and August 31, a pre-construction survey for actively nesting raptors will be conducted within the Proposed Project footprint and 0.5-mile buffer surrounding the Proposed Project site by a qualified biologist, a maximum of 72 hours prior to the onset of project activities. The qualified biologist(s) must, at a minimum, have experience conducting surveys to identify the specific species and associated habitat that could occur on-site.
b) If any active raptor nests are identified within or adjacent to the Proposed Project site during the pre-construction survey or during work activities, a buffer will be put in place to avoid disturbance to birds as a result of Proposed Project activities. The dimension of the buffer zone will be determined by a qualified biologist, and will depend on the proposed activity, habitat type, and species present, in accordance with USFWS's Nationwide Conservation Measures.
c) Actively nesting raptors will be monitored by a qualified biologist during Proposed Project activities for signs of distress or disturbance as a result of Proposed Project activities. Should the birds show signs of distress, work will cease at that location until the birds have resumed normal behavior and it is determined by the on-site biologist that work can be resumed.

AMM BIO-5: Rookery Birds

To minimize and avoid the potential impacts to special-status rookery birds that may occur within the Proposed Project area the following general measures will be implemented:

a) A pre-activity survey for active rookeries will be conducted (during nesting season from February 1 through August 31) a maximum of 72 hours prior to the onset of soil investigation field activities. The qualified biologist(s) must, at a minimum, have experience conducting surveys to identify the specific rookery bird species and associated habitat that could occur on site.
b) If any active rookeries are identified within or adjacent to the Proposed Project area, a buffer will be put in place to ensure that the birds are not disturbed during work activities. The dimension of the buffer zone will be determined by a qualified biologist, and will depend on the proposed activity, habitat type, and species present, in accordance with USFWS's Nationwide Conservation Measures.

AMM BIO-6: Giant garter snake

a) Pre-construction surveys within suitable upland habitat for giant garter snake will be conducted during the snakes' active season of May 1 through October 1.
b) If giant garter snake is observed on-site, all work will halt within the immediate vicinity, and it will be allowed to leave the Proposed Project area on their own.

AMM BIO-7: General Fish

a) In-water activities will be limited to only being conducted during the fish work window (August 1 through October 31) to avoid impacts to sensitive fish species that have the potential to occur in the Proposed Project area.

AMM BIO-8: Western pond turtle

a) In areas with the potential for western pond turtle to occur, pre-activity presence/absence surveys for western pond turtle shall occur within 48 hours prior to the onset of project activities at the Proposed Project area.
b) If western pond turtle is observed on-site, all work will halt within the immediate vicinity, and it will be allowed to leave the Proposed Project area on their own.

AMM BIO-9: Special-status bat species

To minimize and avoid the potential impacts to special-status bats that may occur within the project area, the following general measures will be implemented:

a) Pre-activity roosting special-status bat surveys and an evaluation of roosting habitat suitability for bats will be conducted by a qualified biologist familiar with the species that could potentially occur within the Proposed Project area. The qualified biologist should, at a minimum, have experience conducting roosting bat surveys and be able to identify the presence of guano and urine stains.
b) Any identified roosts of special-status bats will be avoided, and a buffer will be established based on on-site conditions and at the discretion of the biologist, to ensure that the roosting bats are not disturbed. If a nursery colony is identified, additional measures may be required including a larger buffer, to ensure no disturbance. Such additional measures will be determined and monitored by a qualified biologist.

AMM HAZ-1

a) A plan(s) (often a contractor's safety plan) with a section on hazardous materials shall be written and kept on-site that describes the hazardous materials used during project activities, and how the materials will be properly stored, used,

transported, and disposed of. All hazardous materials shall be properly labeled and be recycled properly or disposed of at a properly licensed disposal facility.

b) The contractor shall contact the local fire agency and the local certified unified program agency (CUPA) for any site-specific requirements regarding hazardous materials or hazardous waste containment or handling.
c) If hazardous materials, such as oil, batteries, or paint cans, are encountered in the Proposed Project area, the contractor(s) shall carefully remove and dispose of them according to the safety plan and the spill prevention and response plan. All hazardous materials will be disposed of at a properly licensed disposal facility.
d) Contact of chemicals with precipitation shall be minimized by storing chemicals in watertight containers or in a completely enclosed storage shed, with appropriate secondary containment to prevent any spillage or leakage.
e) Quantities of toxic materials, such as equipment fuels and lubricants, shall be stored with secondary containment capable of containing 110 percent of the primary container(s).
f) Petroleum products, chemicals, cement, fuels, lubricants, and non-storm drainage water or water contaminated with the aforementioned materials shall not contact soil and not be allowed to enter surface waters or the storm drainage system.
g) All toxic materials, including waste disposal containers, shall be covered when they are not in use, and located as far away as possible from a direct connection to the storm drainage system or surface water.
h) Sanitation facilities (e.g., portable toilets) shall be sited in a manner that avoids any direct connection to the storm drainage system or receiving water.
i) Sanitation facilities shall be regularly cleaned or replaced and inspected daily for leaks and spills.
j) For in-water work, positive barriers consisting of suitable type of spill-stoppage materials will be placed around the work area on the barge.

AMM HAZ-2 Spill Prevention and Response Plan

A plan(s) (often a contractor's safety plan) with a section on spill prevention and response shall be developed by the contractor and submitted to DWR before any ground-disturbing activities in order to prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water (including untreated wastewater) into channels. The following measures shall be included in the plan:

a) All field personnel shall be appropriately trained in spill prevention, hazardous material control, and cleanup of accidental spills.

b) Equipment and materials for cleanup of spills will be available on-site and spills and leaks shall be cleaned up immediately and disposed of according to guidelines stated in the spill prevention and response plan.
c) Field personnel shall ensure that hazardous materials are properly handled, and natural resources are protected by all reasonable means.
d) Spill prevention kits shall always be in close proximity when using hazardous materials (e.g., at crew trucks and other logical locations). All field personnel shall be advised of these locations.
e) Field personnel shall routinely inspect the worksite to verify that spill prevention and response measures are properly implemented and maintained.
f) Field personnel will routinely inspect the worksite to verify that the spill prevention and response plan is properly implemented and maintained. Staff will notify contractors immediately if there is a noncompliance issue and will require immediate correction of any non-compliant behavior.
g) Absorbent materials will be used on small spills located on the impervious surface rather than hosing down the spill; wash waters shall not discharge to the storm drainage system or surface waters. For small spills on previous surfaces such as soils, wet materials will be excavated and properly disposed of rather than burying them. The absorbent materials will be collected and disposed of properly and promptly.

   As defined in 40 CFR 110, a federally reportable spill of petroleum products is the spilled quantity that:

   a. Violates applicable water quality standards.
   b. Causes a film or sheen on, or discoloration of, the water surface or adjoining shoreline.
   c. Causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines.

h) If a spill is reportable, the contractor will notify the DWR staff, and the DWR staff will take action to contact the appropriate safety and cleanup crews to ensure that the spill prevention and response plan is followed. A written description of reportable releases must be submitted to the regional board and the California Department of Toxic Substances Control (DTSC). This submittal must contain a description of the release, including the type of material and an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred, and a description of the steps taken to prevent and control future releases. The releases will be documented on a spill report form.

i) If a significant spill has occurred, and results determine that project activities have adversely affected surface water or groundwater quality, a detailed analysis will

be performed to the specifications of DTSC to identify the likely cause of contamination. This analysis will include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, the DWR or contractors will select and implement measures to control contamination, with a performance standard that surface and groundwater quality must be returned to pre-facility conditions. These measures will be subject to approval by the DWR, DTSC, and the regional board.

AMM HAZ-3:

a) Stockpiling materials, portable equipment, vehicles, and supplies, including chemicals, will be restricted to the levee crown within the Proposed Project boundary, and not stored where they could wash into sensitive habitats.
b) Stockpiling materials, portable equipment, vehicles, and supplies, including chemicals, will be restricted to the levee road or within the barge.

2.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

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

Determination:

On the basis of this initial evaluation:

☐ 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 Proposed Project have been made by or agreed to by the Proposed 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.

Clay Booher — 3/30/2022

Signature — Date

Clay Booher

2.1 EVALUATION OF ENVIRONMENTAL IMPACTS

2.1.1 AESTHETICS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In nonurbanized 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?	☐	☐	☒	☐

d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

2.1.1.1 Environmental Setting

The Proposed Project is located along the Sacramento River in Hood, California in Sacramento County. The Proposed Project site is situated within a gravel yard on the levee crest, between the Sacramento River and SR 160. SR 160 was officially designated as a State Scenic Highway by the California Department of Transportation (Caltrans) in 1969 because of the scenic quality of the landscape that can be enjoyed by travelers (California Department of Transportation 2021).

Zoning

The Proposed Project is made up of five parcels shown in Figure 6 with varying zone and land use designations, set by the Sacramento County General Plan, as the following:

Parcel number: 132-0091-004
Zoning: Light Industrial, Delta Waterways
Land Use: Intensive Industrial

Parcel number: 132-0091-005
Zoning: Light Industrial, Delta Waterways
Land Use: Intensive Industrial

Parcel number: 132-0091-006
Zoning: Light Industrial, Delta Waterways, Agricultural 80
Land Use: Intensive Industrial

Parcel number: 132-0091-014
Zoning: Light Industrial, Delta Waterways
Land Use: Agricultural Cropland

Parcel number: 132-0091-018
Zoning: Light Industrial
Land Use: Intensive Industrial

Figure 6. Proposed Project Parcels

Permitted uses for Light Industrial include operations that do not create smoke, gas, odor, dust, sound, or other objectionable influences that would affect surrounding uses. The permitted uses for Agricultural 80 are to promote long-term agricultural use for agricultural land that has a minimum lot size of 80 acres and to discourage premature conversion of agricultural land to urban uses.

The existing visual character of the Proposed Project site consists of a gravel industrial yard adjacent to riparian/riverine habitat and several buildings including an antique store and event center. Sacramento County General Plan 2030 and Land Use Diagram Map and has designated the Proposed Project area as intensive industrial and agricultural cropland (Sacramento County Office of Planning and Environmental Review 2020). Surrounding land is zoned as agricultural cropland and low-density residential. The Proposed Project site is on DWR property and is not accessible to the public.

2.1.1.2 Discussion

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

Less than significant impact. The Proposed Project is not expected to have a substantial adverse effect to any scenic vistas within the region. While the Proposed Project site is visible from a scenic highway SR 160 (see Photo 6), work entails removing remnants of an abandoned fish-screen testing facility, which has not been in use or maintained since the late 1980s and is in poor condition. Removal of this facility would restore the site to its intended condition, essentially improving the visual characteristic of the site. While construction would be visible to the public from SR 160, construction would be temporary in nature, only lasting approximately 3 months. As a result, impacts are anticipated to be less than significant to scenic vistas because of the Proposed Project.

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

No impact. The Proposed Project entails removing remnants of an abandoned fish-screen testing facility, which has not been in use or maintained since the late 1980s and is in poor condition (see Photo 4). Removal of this facility would restore the site to its intended condition, essentially improving the visual characteristic of the site. No trees, rock outcroppings, or historic buildings would be damaged as a result of the Proposed Project. As a result, no impacts to scenic resources, such as trees, rock outcroppings, and historic buildings within a state highway, are anticipated to be caused by the Proposed Project.

c) Would the project, in nonurbanized 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?

Less than significant impact. The Proposed Project entails removing remnants of an abandoned fish-screen testing facility, which has not been in use or maintained since the late 1980s and is in poor condition (see Photos 4 through 7). Removal of this facility would restore the site to its intended condition, essentially improving the visual characteristic of the site. While the Proposed Project site is not accessible to the public, it is visible from SR 160 and the Sacramento River, meaning construction activities would be visible to the public while traveling on SR 160 or on the Sacramento River. But construction would be temporary in nature, lasting approximately three months, and the site would be restored to pre-facility installation conditions upon completion. Removal of the facility would not conflict with applicable zoning or other regulations governing scenic

quality, as the property would remain zoned as Light Industrial. Consequently, impacts to the existing visual character or quality of public views of the site and its surroundings are anticipated to be less than significant as a result of the Proposed Project.

d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No impact. The Proposed Project entails removing remnants of an abandoned fish-screen testing facility and does not include installation of any lighting or structures that would cause light or glare. Construction activities would be temporary in nature, and would only be conducted during daylight hours, so no temporary lighting would be used. Consequently, no impacts are anticipated to substantial light or glare as a result of the Proposed Project.

2.1.2 AGRICULTURE AND FORESTRY RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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, as updated) prepared by the California Department 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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☒

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))?	☐	☐	☐	☒
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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?	☐	☐	☐	☒

2.1.2.1 Environmental Setting

The Proposed Project is located at the southern edge of Sacramento County in the community of Hood and is comprised of a graveled parking lot on the levee crown between SR 160 and the Sacramento River. The levee bank is comprised of riprap, trees and shrubby vegetation, and ruderal vegetation. No part of the Proposed Project site is comprised of farmland, timberland, forest land or any other land use type that includes agricultural or forestry resources. Zoning designations for the Proposed Project area are Light Industrial, Delta Waterways, and Agricultural 80, specific information can be found in Section 2.1.1.1 of this document.

2.1.2.2 Discussion

a) Would the project 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?

No impact. The Proposed Project location does not include any farmland and the Proposed Project activities would not include the conversion of prime farmland, unique farmland, or farmland of statewide importance. Consequently, no impacts are anticipated to prime farmland, unique farmland, or farmland of statewide importance as a result of the Proposed Project.

b) Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?

No impact. The Proposed Project location is zoned as Light Industrial, Delta Waterways, and Agricultural 80 by Sacramento County. A parcel zoned as Agricultural 80 applies to a parcel consistent with 80 acres, the one parcel zoned as such (No. 132-0091-006, Figure 6.) is not, see Section 2.1.1.1. In addition, the Proposed Project activities will not conflict with county zoning or of the Williamson Acts contract, as the Proposed Project area will not be converted to any other land uses. All Proposed Project activities are temporary and will return the area as it formally was. Consequently, no impacts are anticipated to existing zoning for agricultural use or a Williamson Act contract as a result of the Proposed Project (Sacramento County GISAdmin 2021).

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

No impact. The Proposed Project would not conflict with Public Resources Code Section 12220 (g). The Proposed Project area does not include land that is zoned for timberland as defined by Public Resources Code Section 4526 or timberland zoned Timberland Production as defined by Government Code Section 51104 (g). Consequently, no impacts are anticipated to existing zoning as a result of the Proposed Project.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No impact. Impacts to forest land, including loss or conversion of forest land to non-forest uses, would not occur because no trees would be cut down on forest land and forest land would not be converted as a result of the Proposed Project. Consequently, no impacts are anticipated to loss or conversion of forest land as a result of the Proposed Project.

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

No impact. Impacts to farmland, including loss or conversion to non-agricultural use, or loss or conversion of forest land to non-forest uses, would not occur because the Proposed Project is not located on farmland or forest land; farmland and forest land is not being converted. Consequently, no impacts are anticipated to the existing environment regarding the conversion of farmland or forest land as a result of the Proposed Project.

2.1.3 AIR QUALITY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people?	☐	☐	☒	☐

2.1.3.1 Environmental Setting

National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) have been established for the following criteria pollutants: carbon monoxide (CO), ozone (O_3), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), particulate matter less than 10 microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), and lead (Pb). These standards have been established with a margin of safety to protect the public's health. Both the U.S. Environmental Protection Agency (EPA) and the CARB designate areas of the state as attainment, nonattainment, maintenance, or unclassified for the various pollutant standards according to the federal Clean Air Act (CAA) and the California Clean Air Act (CCAA), respectively.

An "attainment" designation for an area signifies that pollutant concentrations did not violate the NAAQS or CAAQS for that pollutant in that area. A "nonattainment" designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as

identified in the criteria. A “maintenance” designation indicates that the area was previously in non-attainment and is currently in attainment for the applicable pollutant; the area must demonstrate continued attainment for a specified number of years prior to re-designation as an “attainment” area. An “unclassified” designation signifies that data do not support either attainment or nonattainment status.

The Proposed Project site is located in Sacramento County, which is within the Sacramento Valley Air Basin (SVAB) and under the local jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). The attainment status for the SMAQMD Districts is shown in Table 6.

Table 6. Attainment Status for SMAQMD

Air Quality Parameters	State	Federal
1-hr Ozone (O_3)	Nonattainment	Attainment
8-hr Ozone (O_3)	Nonattainment	Nonattainment
24-hr PM_{10}	Nonattainment	Attainment
Annual PM_{10}	Nonattainment	N/A
24-hr $PM_{2.5}$	N/A	Nonattainment[a]
Annual $PM_{2.5}$	Attainment	Attainment

Source: Sacramento Metropolitan Air Quality Management District 2021b
Table 6 note: [a] EPA issued determination of attainment on May 10, 2017 (82 FR 21711), but the Sacramento Federal $PM_{2.5}$ Nonattainment Area has not yet redesignated to Attainment.

Because Sacramento County does not meet the ozone air quality standards, Sacramento County is under the Sacramento Federal Nonattainment Area which has been designated as a severe-15 area (Sacramento Metropolitan Air Quality Management District 2021b).

Sacramento Valley Air Basin

The SVAB covers all of Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, Yolo, and Yuba counties, the westernmost portion of Placer County, and the northeastern half of Solano County. The SVAB is bound by the North Coast Ranges to the west and the Northern Sierra Nevada to the east. The intervening terrain is relatively

flat. It has a Mediterranean climate characterized by hot dry summers and mild rainy winters. During the year the temperature may range from 20 ºF to 115 ºF, with summer highs usually in the 90s and winter lows occasionally below freezing (Sacramento Metropolitan Air Quality Management District 2021c). The average annual rainfall is approximately 20 inches. Ozone is the primary criteria pollutant of concern in the SVAB.

Sacramento Metro Air Quality Plans

The SMAQMD is the primary agency responsible for assuring that the NAAQS and CAAQS are attained and maintained in Sacramento County. To achieve and maintain attainment, SMAQMD has prepared air quality plans as required by the CAA and CCAA.

SMAQMD attempts to achieve and maintain attainment of NAAQS through air quality plans that are reviewed by the EPA as required by the federal CAA. Currently, the Sacramento region is designated federal nonattainment for 8-hour ozone and 24-hour $PM_{2.5}$ (Sacramento Metropolitan Air Quality Management District 2021a). To meet federal ozone attainment goals, the SMAQMD developed the Sacramento Regional 2008 NAAQS 8-Hour Ozone Attainment and Reasonable Further Progress Plan it wrote with neighboring regional air quality districts. CARB approved the plan in 2017 and plans to request plan approval from the EPA. The 8-Hour Ozone plan covers Sacramento and Yolo counties and portions of Placer, El Dorado, Solano, and Sutter counties and addresses how the region would attain 2008 federal 8-Hour Ozone standards. The Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan provides how the Sacramento Federal Nonattainment Area seeks to meet attainment of the 2008 ozone NAAQS by providing updated emissions inventory, motor vehicle emissions budgets, evidence of compliance with vehicle miles traveled emissions offset and reasonably available control measure requirements, and photochemical modeling for attainment demonstration (Sacramento Metropolitan Air Quality Management District 2017b). To meet the federal 24-hour $PM_{2.5}$ standards, SMAQMD is abiding by the $PM_{2.5}$ Maintenance Plan and Redesignation Request the district wrote in 2013 with neighboring air quality districts to cover Sacramento County and parts of Yolo, El Dorado, Placer, and Solano counties. On May 10, 2017, the EPA found that the area attained the 2006 24-hour $PM_{2.5}$ NAAQS for 24-hour $PM_{2.5}$ (Sacramento Metropolitan Air Quality Management District 2021a). The SMAQMD will update and submit the $PM_{2.5}$ Maintenance Plan and Redesignation Request based on the clean data finding made by the EPA.

SMAQMD attempts to achieve and maintain attainment of CAAQS through the 2015 Triennial Report and Progress Plan, and the annual progress reports required by the CCAA and the California Health and Safety Code (Sacramento Metropolitan Air Quality Management District 2021a). Sacramento County is designated nonattainment for ozone and particulate matter, and the district prepared the Air Quality and Attainment Plan in 1991 to achieve attainment. Additionally, the CCAA requires districts to access their CAAQS attainment progress through triennial reports, and SMAQMD first prepared a triennial report of the Air Quality and Attainment Plan in 1994 and the most recent report

is the 2015 Triennial Report and Progress Plan (Sacramento Metropolitan Air Quality Management District 2021a). The 2015 Triennial Report and Plan Revision provides progress toward attaining the State ozone standard by providing historical trends in ambient air quality levels, updates to emissions inventories, evaluations of the implementation of station and mobile source control measures to reduce air pollutant emissions, and discussion on ozone transportation mitigation requirements (Sacramento Metropolitan Air Quality Management District 2015).To assess the district's progress toward meeting the triennial report's air quality control measures, the district is required to prepare and submit an annual progress report to the CARB every year. The most current district report is the 2016 Annual Progress Report Plan.

SMAQMD Standards

To accomplish the mandates of these plans, SMAQMD provides CEQA guidance to evaluate a project's air quality impacts in relation to the federal and State air quality standards. The air quality impact of a project is determined by examining the types and levels of emissions generated by the project, the existing air quality conditions, and neighboring land uses (Sacramento Metropolitan Air Quality Management District 2021c). To assist projects in assessing project air quality impacts, SMAQMD has established significance thresholds for criteria air pollutants (ozone and particulate matter), toxic air contaminants (TACs), and greenhouse gas emissions. Ozone is not emitted directly into the air but is formed through chemical reactions between nitrogen oxides and reactive organic gasses (Sacramento Metropolitan Air Quality Management District 2021b). A project's ozone emission is evaluated through the ozone precursors nitrogen oxides and reactive organic gases. The Proposed Project will have potentially significant adverse impacts on air quality if the project exceeds any of the thresholds. The SMAQMD thresholds are shown in Table 7.

Table 7. SMAQMD Air Quality Thresholds of Significance for Criteria Air Pollutants

Pollutant	Construction Related	Operation-Related
ROG (reactive organic gasses)	None	65 lbs/day
NO_X (nitrogen oxides)	85 lbs/day	65 lbs/day
PM_{10}	80 lbs/day; 14.6 tons/year	80 lbs/day; 14.6 tons/year
$PM_{2.5}$	82 lbs/day; 15 tons/year	82 lbs/day; 15 tons/year

Source: Sacramento Metropolitan Air Quality Management District 2021c

Impact Assessment Approach

The Proposed Project's impacts on air quality were assessed using methods and assumptions recommended by the SMAQMD. The Proposed Project involves the excavation and disposal of the remaining existing fish-screen testing facility, reconstruction of the levee, and does not involve building any permanent structures or facilities that would generate air pollutants. Also, the completion of the Proposed Project will return the area back to pre-facility conditions. Consequently, the Proposed Project should not induce growth in population, employment, land use, or regional vehicle miles traveled. When the Proposed Project is complete, all construction activities will cease, and no further emissions will be generated. Because potential impacts to air quality would only occur during the period when construction is occurring, this impact analysis will focus on air pollutant emissions from Proposed Project activities only.

Based on the SMAQMD CEQA guide, SMAQMD developed screening parameters to determine if projects will have a less-than-significant impact on air quality without modeling. The Proposed Project did not meet these SMAQMD screening parameters because the Proposed Project involves excavation activities and cut-and-fill operations. As a result, the Proposed Project is required to perform a detailed construction emissions analysis. DWR quantified these emissions using the Roadway Construction Emissions Model (Version 9.0.0; Sacramento Metropolitan Air Quality Management District 2018) and Harbor Craft, Dredge and Barge Emissions Factor Calculator (Sacramento Metropolitan Air Quality Management District 2017a) as recommended by SMAQMD staff. DWR conducted the analysis using the assumptions that can be seen in Appendix D.

2.1.3.2 Discussion

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

No impact. The air plans applicable to the Proposed Project are the latest published SMAQMD air quality plans: The Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan and the 2015 Triennial Report and Plan Revision. Both plans provide measures to limit emissions within the plan areas to achieve and maintain attainment of the NAAQS and CAAQS criteria pollutants.

The SMAQMD created a CEQA guide to ensure development projects within the Sacramento region do not conflict with the attainment of federal and State air quality standards. Thresholds of significance were developed to help identify projects that would conflict with air quality plans. If the Proposed Project emissions are below these thresholds or mitigated below the thresholds, the Proposed Project does not conflict with the air quality plan.

DWR followed the SMAQMD CEQA guide for construction-generated criteria air pollutant and precursor emissions to ensure the Proposed Project would not conflict with the air quality plans. For the type of project activities involved with this Proposed Project, the SMAQMD guide recommends the Proposed Project: (1) implement the Sacramento Metro Air District's Basic Construction Emissions Control Practices; (2) perform a full, detailed construction emissions analysis: and (3) implement feasible mitigation measures to reduce significant impacts to a less-than-significant level if impacts are significant.

The Proposed Project will comply with the CEQA guide recommendations. DWR will implement the BCECP as described in the BMPs 1–9, see Section 1.5.2. Additionally, DWR conducted a detailed construction emissions analysis of the Proposed Project using the Roadway Construction Emissions Model (RCEM) and Harbor Craft, Dredge and Barge Emissions Factor Calculator as recommended by SMAQMD. The construction activity emissions were estimated using the assumptions detailed in Appendix D. The RCEM modeled emissions for construction equipment, transport vehicles, and fugitive dust from earth moving and grading on land. The Harbor Craft, Dredge, and Barge Emission Factor Calculator modeled emissions for construction equipment and transport equipment conducted in the Sacramento River. The results of the Harbor Craft, Dredge and Barge Emissions Factor Calculator were incorporated into the RCEM. The Proposed Project's total construction emission estimates can be found in the Appendix D, Roadway Emission Model Results. The Maximum Daily and Annual Emissions Anticipated from Proposed Project Activities Table (Table 8) shows the SMAQMD daily and annual construction thresholds compared to the calculated maximum anticipated daily and annual emissions of the Proposed Project. The Proposed Project emissions are below the SMAQMD thresholds of significance. Consequently, Proposed Project impacts are less-than-significant levels, so the Proposed Project does not need to implement mitigation measures.

Table 8. Maximum Daily and Annual Emissions Anticipated from Proposed Project Activities

Pollutant	SMAQMD Threshold of Significance	Calculated Maximum Construction Emissions
ROG (reactive organic gasses)	NONE	3.68 pounds/day (0.05 tons/year)
NO_X (nitrogen oxides)	85 pounds/day	42.94 pounds/day (0.54 tons/year)
PM_{10} (particulate matter < 10 microns)	If all feasible BMPs are applied: 80 pounds/day (14.6 tons/year)	16.37 pounds/day (0.21 tons/year)
$PM_{2.5}$ (particulate matter < 2.5 microns)	If all feasible BMPs are applied: 82 pounds/day (15 tons/year)	4.33 pounds/day (0.06 tons/year)

Source: Roadway Construction Emissions Model (Sacramento Metropolitan Air Quality Management District 2018)

Because the Proposed Project complies with the CEQA guide for construction-generated emissions and calculated emissions are below the SMAQMD thresholds of significance, the Proposed Project does not conflict with the air quality plans.

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

Less than significant impact. The SMAQMD has identified air quality thresholds of significance for criteria air pollutants for which the region is in non-attainment (see Table 8). According to the SMAQMD CEQA Guidelines, projects will have a significant effect on air quality if the projects' maximum daily NOx and PM emissions exceed significance thresholds (Sacramento Metropolitan Air Quality Management District 2021c). As a result, it may be assumed that projects that do not exceed the significance thresholds may have a less than significant impact regarding a cumulatively considerable net increase of the region's non-attainment criteria pollutants.

DWR conducted a detailed construction emissions analysis of the Proposed Project, and the assumptions and results of the analysis are detailed in Appendix D. The Proposed Project does not exceed SMAQMD significance thresholds as shown in The Maximum Daily and Annual Emissions Anticipated from Project Activities Table (Table 8).

While the Proposed Project will emit criteria pollutants, these values will not exceed thresholds of significance or result in a cumulative considerable net increase of criteria pollutants. Consequently, the impacts associated with criteria pollutant emissions are anticipated to be less than significant as a result of the Proposed Project.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Less than significant impact. Construction of the Proposed Project would result in short-term diesel emissions from on-site heavy-duty equipment. Diesel emissions generate CO, NO_X, particulate matter (i.e., PM_{10} and $PM_{2.5}$), and TAC pollutants that could result in adverse health effects on sensitive receptors. The Proposed Project's direct and indirect emissions generation derives solely from construction (as described in Section 2.1.3.1 Impact Assessment Approach). Calculations for temporary emissions from construction show that CO, NO_X, particulate matter (i.e., PM_{10} and $PM_{2.5}$) impacts will not exceed thresholds of significance. As a result, the Proposed Project's construction generated CO, NOx, and particulate matter impacts to sensitive receptors is not significant. SMAQMD has not established a threshold of significance for TAC emissions and recommends the TAC emissions are addressed on a case-by-case basis.

Members of the population that are considered particularly sensitive to the effects of air pollutants include children, the elderly, and people with illnesses. That means sensitive receptors include schools, hospitals, and residential areas. For the Proposed Project, the nearest sensitive receptors are residential homes in the adjacent town of Hood where the nearest home is within 250 feet of the Proposed Project site. Hood has an estimated population of 244 people with 32.3 percent in the sensitive group (people under the age of 18 and 65 and older). All Hood residences are within 0.5 mile of the Proposed Project (U.S. Census Bureau 2021).

TAC pollutants that the Proposed Project will emit are particulate matter from diesel exhaust (PM exhaust). The Proposed Project will utilize a variety of diesel-powered equipment that will operate at various hours per day as listed in Appendix D. The barge, tugboat, crawler crane, and vibratory pile extractor will access the site by the river and will be staged in the river which is geographically separated from the residences by the levee where the Proposed Project area is located. The remainder of equipment will be brought in by paved roads through Hood and staged in the two staging and laydown areas as described and shown in the Proposed Project description. For the duration of the Proposed Project, the equipment may generate a total of 0.02 tons (1.79 pounds/day) of PM_{10} exhaust and 0.02 tons (1.46 pounds/day) of PM_{10} exhaust. While the Proposed Project exhaust estimations include gas-generated vehicle exhaust, the PM exhaust was determined using the exhaust construction emissions provided as part of the Proposed Project's construction emissions analysis detailed in Appendix D.

While the Hood residences are close in proximity, the Proposed Project would not significantly impact the Hood residents. First, the residents will have short-term exposure to TAC emissions. Because the pollutants will be emitted intermittently over a period of 49 days from August 1 through October 15, haul trucks and off-road equipment would not operate for an extended period, and work is anticipated to occur during weekdays and daylight hours when the residents are less likely to be home. Second, predominant winds will help reduce impacts to residents because predominant winds at the Proposed Project push TAC pollutants away from Hood. Based on the nearest National Oceanic and Atmospheric Administration (NOAA) meteorological station at the Sacramento Executive Airport (approximately 10 miles from the Proposed Project), the Proposed Project's predominant wind direction is southwest (210°) with average wind speeds of 5.8 to 7 mph from August through September and northwest (330°) with average wind speed of 5.2 mph in October (National Oceanic and Atmospheric Administration 2021). The light breeze at the Proposed Project can help push TAC pollutants away from Hood and limit potential impacts. As a result, impacts would be less than significant.

d) Would the project create objectionable odors affecting a substantial number of people?

Less than significant impact. The Proposed Project would not result in odor-causing emissions that would affect a substantial number of people. Odor created by the Proposed Project would only include odors associated with diesel exhaust from the use of heavy machinery, would be temporary in nature, would be localized, and would dissipate rapidly from the Proposed Project area with an increase in distance. As a result, impacts caused by objectionable odors would be less than significant.

2.1.4 BIOLOGICAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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, the U.S. Fish and Wildlife Service, or the National Marine Fisheries Service	☐	☐	☒	☐

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	☐	☐	☒	☐
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?	☐	☐	☐	☒
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?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
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?	☐	☐	☐	☒

2.1.4.1 Environmental Setting

The Proposed Project is in Hood, California in Sacramento County, approximately 18.5 miles southwest of the City of Sacramento, within the Sacramento Valley Subregion of the Great Central Valley Geographic region of California. The regional climate is generally Mediterranean in nature with warm, dry summers and rainy winters. Average annual temperatures range from approximately 39.6 °F in January, to 91.7 °F in July. The average annual precipitation is approximately 18.15 inches (Western Regional Climate Center 2021).

The Proposed Project upland area encompasses Light Industrial, Delta Waterways, and Agricultural 80 zoning designations (see Section 2.1.1) that DWR utilized historically to access and operate a fish-screen testing facility and currently to access a water-quality

monitoring station. The DWR water quality station is located north of the Proposed Project area along the Sacramento River.

The Proposed Project is within and adjacent to the Sacramento River about 0.3 mile north of River Mile 38 (Sacramento River Forum 2021). Waters from the Sacramento River constitute 80 percent of the flow to the Delta (Sickman et. al. 2007). The Sacramento River is the largest river in California and collects precipitation and snowmelt runoff from the western slopes of the Sierra Nevada, the eastern slopes of the Coast Ranges, and the southern Trinity and Klamath ranges. The river channel is approximately 480 kilometers (km) long flowing from north to south and ultimately discharging into the Pacific Ocean via the San Francisco Bay. The Sacramento River Valley is roughly 100 km wide and 400 km long and is composed primarily of sedimentary rocks and recent alluvium, a structurally controlled basin created by the Cascade Mountains and Sierra Nevada to the east and the Coast Ranges to the west (Micheli and Larsen 2011).

2.1.4.2 Methodology

DWR environmental scientists compiled a list of special-status species and plant communities that were evaluated for this Proposed Project (Appendix A). The list was developed from a review of the following sources:

- CDFW California Natural Diversity Database (CNDDB) for the following nine USGS 7.5-minute Quadrangle maps: Saxon, Clarksburg, Florin, Liberty Island, Courtland, Bruceville, Rio Vista, Isleton, and Thornton (California Department of Fish and Wildlife 2021);
- U.S. Fish and Wildlife Service website Information for Planning and Consultation (iPaC) system (U.S. Fish and Wildlife Service 2021); and
- California Native Plant Society (CNPS) on-line Inventory of Rare and Endangered Plants for the following nine USGS 7.5-minute Quadrangle maps: Saxon, Clarksburg, Florin, Liberty Island, Courtland, Bruceville, Rio Vista, Isleton, and Thornton (California Native Plant Society 2021);
- National Oceanic and Atmospheric Administration (NOAA) Endangered Species Act Section 7: West Coast Region (National Oceanic and Atmospheric Administration 2021)

The complete list includes information on species status, habitat description, whether potential habitat occurs in the project area, and whether impacts to the species are expected because of the Proposed Project. Expected species occurrence were determined through a review of CNDDB, geographic information system (GIS) records, analysis of aerial imagery, and information collected during DWR site surveys. Multiple site surveys for this Proposed Project were conducted at the Proposed Project area by

DWR Environmental Scientists between 2020 and 2021, which included multiple wildlife surveys, a botanical survey on November 19, 2021, that followed CNPS and CDFW protocols, and a valley elderberry longhorn beetle and host plant survey on December 9, 2021, that followed USFWS protocol.

2.1.4.2.1 Habitat Types

The dominant upland habitat within and surrounding the Proposed Project is approximately 0.14-acre of valley oak woodland. The valley oak riparian woodland within and surrounding the Proposed Project is dominated by valley oak (*Quercus lobata*), with scattered individuals of interior live oak (*Quercus wislizeni*), and Northern California black walnut (*Juglans hindsii*). The understory of this vegetation community is dominated by California grape (*Vitis californica*) and rough horsetail (*Equisetum hyemale*). Riparian habitat is a transition zone between aquatic and terrestrial habitats. It generally provides habitat for invertebrates, overwintering, and nesting reptiles (e.g., western pond turtle, giant garter snake), nesting and foraging birds (e.g., Black-crowned Night Heron, White-tailed Kite), roosting and foraging habitat for mammals (e.g., hoary bat, western red bat), and shaded cover and source of terrestrial insects for fish (e.g., Longfin Smelt). A list of all plant species observed on site from the aquatic resources delineation report is included in Appendix B.

The Proposed Project area also contains approximately 0.631-acre of open water aquatic habitat within the Sacramento River. At the Proposed Project site, the channel is approximately 585 feet wide. Fish commonly found in this open water habitat include Chinook salmon (Central Valley spring-run evolutionary significant unit (ESU) and Sacramento River winter-run ESU; *Oncorhynchus tshawytscha*) Delta Smelt (*Hypomesus transpacificus*), Green Sturgeon (*Acipenser medirostris*), Sacramento Splittail (*Pogonichthys macrolepidotus*), steelhead – Central Valley DPS (*Oncorhynchus mykiss iridus pop. 11*), and Longfin Smelt (*Spirinchus thaleichthys*).

Within the Proposed Project area, the Sacramento River is designated critical habitat for Chinook salmon (Central Valley spring-run ESU and Sacramento River winter-run ESU), Green Sturgeon, and Delta Smelt (U.S. Department of the Interior Bureau of Reclamation 2017). Critical habitat provides these federally listed species with specific geographical areas that consists of physical, and biological features that are essential to their management and protection (National Oceanic and Atmospheric Administration 2022a).

Approximately 0.621 acre of the Proposed Project area is upland area where most of the parcels are classified as Light Industrial and includes paved and gravel access roads, staging areas, and stockpile areas. Light Industrial areas within the Proposed Project area are mostly unvegetated. Sparsely vegetated portions of these urban areas occur between the levee crown and the gravel access road. These areas are dominated by non-native plant species characteristic of disturbed sites, including ripgut brome (*Bromus*

diandrus), slender wild oat (*Avena barbata*), purple wild radish (*Raphanus sativus*), and filaree (*Erodium moschatum*).

2.1.4.3 Special-Status Species

For the purposes of this analysis, special status has been defined to include those species that meet the definitions of rare or endangered plants or animals under CEQA Guidelines including species that are:

- Listed as endangered or threatened under the Endangered Species Act (ESA) (or formally proposed for, or candidates for, listing).
- Listed as endangered or threatened under California Endangered Species Act (CESA) (or proposed for listing).
- Native plants that are designated as endangered or rare, pursuant to California Fish and Game Code Section 1901.
- Birds, mammals, or fish designated as fully protected, pursuant to California Fish and Game Code Sections 3511, 4700, or 5050.
- Designated as a species of special concern or watch list species by CDFW.
- Included in CNPS's Inventory of Rare Plants (Rare Plant Rank 1 through 4).

The table included as Appendix A provides a summary of regionally occurring special-status species based on queries of the CNDDB, USFWS iPaC, CNPS, and the NOAA database. The presence of each species or its habitat during the biological surveys was used as the rationale to determine if the species has the potential to occur in the Proposed Project area. Special-status species with little or no potential to occur within the Proposed Project area are not discussed further.

Based on the availability of suitable habitat and nearby occurrences, five special-status plant species and 26 special-status wildlife species have the potential to occur in the Proposed Project area and are discussed below.

2.1.4.3.1 Special-Status Plants

There are five special-status plant species with the potential to be affected by the Proposed Project because of the justifications discussed below: Delta mudwort, Delta tule pea, Mason's lilaeopsis, Suisun Marsh aster, and woolly rose-mallow. This section includes species accounts for each of these plant species and discusses the effect determinations made in the species table found in Appendix A.

Delta mudwort (*Limosella australis*)

Delta mudwort has a California Rare Plant Rank (CRPR) of 2B.1 but is not listed under ESA or CESA. This species is a perennial stoloniferous herb in the figwort family, and it blooms from May to August (California Native Plant Society 2021). The current range of this species in California includes the Sacramento-San Joaquin Delta (Delta) region of the Central Valley, and the Central Coast (California Native Plant Society 2021, Jepson Flora Project 2021). It typically grows in marshes and swamps and riparian scrub (California Native Plant Society 2021). The microhabitat for Delta mudwort includes mud banks in marshy or scrubby riparian associations (California Department of Fish and Wildlife 2021). Threats to this species include streambank alteration, levee maintenance, erosion, recreational activities, and foot traffic (California Native Plant Society 2021).

The Proposed Project's impacts on Delta mudwort are less than significant. While the species has the potential to occur within the riprap at the water's edge, the species was not observed within the Proposed Project area during the November 19, 2021, botanical survey, and the closest CNDDB occurrence is approximately 6 miles away. Another botanical survey will be conducted in the spring of 2022 for any special-status plant species in the Proposed Project area. Any special-status plants observed will be flagged and avoided. While the Proposed Project's impacts on Delta mudwort are less than significant, the implementation of avoidance and minimization measures (AMM) BIO-1 and AMM BIO-2 during Proposed Project activities would further ensure avoidance and minimize the potential to affect Delta mudwort.

Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*)

Delta tule pea has a CRPR of 1B.2 but is not listed under ESA or CESA. This species is a perennial herb in the pea family, and it blooms from May to July (California Native Plant Society 2021). It is endemic to California, and its current range includes the Sacramento Valley and San Joaquin Valley (California Native Plant Society 2021, Jepson Flora Project 2021). It typically grows in marshes and swamps (California Native Plant Society 2021). The microhabitat for Delta tule pea includes freshwater and brackish marshes, usually on marsh and slough edges California Department of Fish and Wildlife 2021). Threats to this species include agriculture, water diversions, and erosion (California Native Plant Society 2021).

The Proposed Project's impacts on Delta tule pea are less than significant. While the species has the potential to occur within the riprap at the water's edge, it was not observed within the Proposed Project area during the November 11, 2021, botanical survey, and the closest CNDDB occurrence is approximately 4 miles away. Another botanical survey will be conducted in the spring of 2022 for any special-status plant species in the Proposed Project area. Any special-status plants observed will be flagged and avoided. While the Proposed Project's impacts on Delta tule pea are less than

significant the implementation of AMM BIO-1 and AMM BIO-2 during Proposed Project activities would further ensure avoidance and minimize the potential to affect Delta tule pea.

Mason's lilaeopsis (*Lilaeopsis masonii*)

Mason's lilaeopsis has a CRPR of 1B.2 and is listed as Rare under National Plant Protection Act. It is not listed under ESA. This species is a perennial rhizomatous herb in the carrot family, and it blooms from April to November (California Native Plant Society 2021). It is endemic to California, and its current range includes the southern Sacramento Valley, northern San Joaquin Valley, Central Coast, and northeastern San Francisco Bay Area (California Native Plant Society 2021, Jepson Flora Project 2021). It typically grows in marshes, swamps, and riparian scrub (California Native Plant Society 2021). The microhabitat for Mason's lilaeopsis includes tidal zones in muddy or silty soil formed through river deposition or riverbank erosion. It can be found in both brackish and freshwater (California Department of Fish and Wildlife 2021). Threats to this species include erosion, channel stabilization, development, flood control projects, recreation, agriculture, shading resulting from marsh succession, and competition with non-native plants (California Native Plant Society 2021).

The Proposed Project's impacts on Mason's lilaeopsis are less than significant. While the species has the potential to occur within the riprap at the water's edge, it was not observed within the Proposed Project area during the November 19, 2021, botanical survey, and the closest CNDDB occurrence is approximately 5 miles away. Another botanical survey will be conducted in the spring of 2022 for any special-status plant species in the Proposed Project area. Any special-status plants observed will be flagged and avoided. While the Proposed Project's impacts on Mason's lilaeopsis are less than significant, the implementation of AMM BIO-1 and AMM BIO-2 during Proposed Project activities would further ensure avoidance and minimize the potential to impact Mason's lilaeopsis.

Suisun Marsh aster (*Symphyotrichum lentum*)

Suisun Marsh aster has a CRPR of 1B.2, but it is not listed under ESA or CESA. This species is a perennial rhizomatous herb in the sunflower family, and it blooms from April through November (California Native Plant Society 2021). It is endemic to California, and its current range includes the southern Sacramento Valley, Central Coast, and San Francisco Bay Area (California Native Plant Society 2021; Jepson Flora Project 2021). It typically grows in brackish and freshwater marshes and swamps (California Native Plant Society 2021). Suisun Marsh aster is most often seen along sloughs with *Phragmites*, *Scirpus*, *Rubus*, and *Typha* species (California Department of Fish and Wildlife 2021). Suisun Marsh aster is threatened by marsh habitat alteration and loss, erosion, development, and non-native plants. (California Native Plant Society 2021).

The Proposed Project's impacts to Suisun Marsh aster are less than significant. While the species has the potential to occur within the riprap at the water's edge, it was not observed within the Proposed Project area during the November 19, 2021, botanical survey, and the closest CNDDB occurrence is approximately 7 miles away. Another botanical survey will be conducted in the spring of 2022 for any special-status plant species in the Proposed Project area. Any special-status plants found will be flagged and avoided. While the Proposed Project's impacts on Suisun Marsh aster are less than significant, the implementation of AMM BIO-1 and AMM BIO-2 during Proposed Project activities would further ensure avoidance and minimize the potential to affect Suisun Marsh aster.

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

Woolly rose-mallow has a CRPR of 1B.2 but is not listed under ESA or CESA. This species is a perennial rhizomatous herb in the mallow family, and it blooms from June to September (California Native Plant Society 2021). It is endemic to California, and its current range includes the Cascade Range Foothills, central and southern Sacramento Valley, and the Delta region of the Central Valley (California Native Plant Society 2021, Jepson Flora Project 2021). It typically grows in marshes and swamps (California Native Plant Society 2021). The microhabitat for woolly rose-mallow includes moist, freshwater-soaked riverbanks and low peat islands in sloughs; it can also occur on riprap and levees (California Department of Fish and Wildlife 2021). Threats to this species include habitat disturbance, development, agriculture, recreational activities, and channelization of the Sacramento River and its tributaries. It is also threatened by weed control measures and erosion (California Native Plant Society 2021).

The closest CNDDB occurrence of woolly rose-mallow to the Proposed Project area is less than one mile away. This species has the potential to occur within riprap along the water's edge in the Proposed Project area. But the Proposed Project's impacts on woolly rose-mallow are less than significant because this species was not observed within the Proposed Project area during the November 19, 2021, botanical survey. Another botanical survey will be conducted in the spring of 2022 for any special-status plant species in the Proposed Project area. Any special-status plants observed will be flagged and avoided. While the Proposed Project's impacts on woolly rose-mallow are less than significant, the implementation of AMM BIO-1 and AMM BIO-2 during Proposed Project activities would further ensure avoidance and minimize the potential to affect woolly rose-mallow.

2.1.4.3.2 Special-Status Wildlife

There are 26 wildlife species with "less than significant" determinations as a result of the justifications discussed below: giant garter snake, western pond turtle, American Peregrine Falcon, Black-crowned Night Heron, Cooper's Hawk, Grasshopper Sparrow, Great Blue Heron, Great Egret, Double-crested Cormorant, Merlin, Song Sparrow

"Modesto" Population, Swainson's Hawk, Western Yellow-billed Cuckoo, White-tailed Kite, American badger, hoary bat, western red bat, Crotch bumble bee, valley elderberry longhorn beetle, Chinook salmon (Central Valley spring-run ESU and Sacramento River winter-run ESU), Delta Smelt, Green Sturgeon, Longfin Smelt, Sacramento Splittail, steelhead- California Central Valley. This section includes species accounts for each of these wildlife species and further discusses the effect determinations made in the species table found in Appendix A.

Reptiles

Giant garter snake (*Thamnophis gigas*)

Giant garter snake is listed as threatened under ESA and as threatened under CESA (California Department of Fish and Wildlife 2019a). It is a large snake, reaching from 36 to 65 inches snout-vent length. It ranges in coloration from olive drab to black with a dorsal and a side stripe that can range from bright to muted orange or yellow, or in some cases be absent, a light-colored ventral surface, and keeled scales (Nafis 2019). Giant garter snake historically occurred throughout the Central Valley of California, although its current range has been reduced to fragmented populations from Glenn County to the edge of the Delta, and south from Merced to Fresno counties. Giant garter snake is a highly aquatic, diurnal snake, relying on the presence of water throughout the summer months, and is found in marshes, sloughs, rice fields, and other water bodies with emergent vegetation, a suitable prey base, and associated upland with burrows, crevices, or riprap for use as refugia. While they are generally underground in refugia during the winter, they are not fully dormant during that time. Breeding occurs shortly after emergence in March or April, depending upon the weather, with females giving birth to offspring between late July and early September.

The Proposed Project's impacts on giant garter snake are less than significant. Potential suitable marginal aquatic habitat (the Sacramento River) and marginal upland refugia, including the riprap along the waterside of the levee, is present within the Proposed Project area, and the closest reported CNDDB occurrence of giant garter snake is approximately 1.2 miles away west of the Proposed Project area. But there is no connectivity between the nearest occurrence and the Proposed Project area, no suitable burrows within the footprint, and the adjacent Sacramento River provides only marginally suitable habitat because of patchy riparian cover, and little emergent vegetation or other refugia. Additionally, this species was not observed during any of the 2021 site surveys. Additional wildlife surveys will be conducted prior to the start of Proposed Project activities. Proposed Project activities will be conducted during the active season for giant garter snake, which enables this species to leave on its own accord should it be in the Proposed Project area during construction activities. Potential habitat provided by levee and Sacramento River within the Proposed Project area would only be temporarily disturbed by Proposed Project activities and the levee will be restored to original contour and grade prior to the original installation of the fish-screen testing facility upon Proposed

Project completion. While the Proposed Project's impacts on giant garter snake are less than significant, the implementation of Avoidance and Minimization Measures (AMM) BIO-1 and AMM BIO-6 would further ensure avoidance and minimize the potential to affect any suitable aquatic habitat, upland refugia habitat, and individual giant garter snake that could be moving through the Proposed Project.

Western pond turtle (*Emys marmorata*)

Western pond turtle is under review for listing under ESA (U.S. Fish and Wildlife Service 2019) and is identified as a CDFW Priority 1 Species of Special Concern (California Natural Diversity Database 2021, Thompson et al 2016). Western pond turtle is a small to medium-sized aquatic turtle, measuring 6.5 to 7 inches straight carapace length. It is brown, tan, olive with a low, unkeeled carapace with a non-serrated rim (Nafis 2019, Stebbins 2003). Western pond turtle is found from the Pacific Coast inland, to the Sierra Nevada foothills, to elevations as much as 6,700 feet above sea level. The species is highly aquatic and can be found in a variety of habitat types including streams, rivers, sloughs, lakes, ponds, reservoirs, marshes, seasonal ponds, and other wetland habitats (Thompson et al 2016). It requires basking sites such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks for thermoregulation; and access to suitable upland habitat with loose soils for nesting, dispersal, and overwintering (Thompson et al 2016). Western pond turtle is active year-round in warmer locations but will spend winter months in colder climates in a state of dormancy often burrowing into loose soil or leaf litter on land, or using undercut banks, snags, rocks, or bottom mud in ponds (Thompson et al 2016). Its diet consists of aquatic invertebrates, algae and other vegetation, small vertebrates, and carrion. Breeding occurs from spring through fall, with nesting taking place from spring to early summer. Nest sites are usually within 100 meters of water, although nests have been reported as far away as 500 meters. Females lay from 1 to 13 eggs, which will hatch in the fall, although the young will remain in the nest until the following spring.

The Proposed Project's impacts on western pond turtle are less than significant. There is suitable aquatic habitat within the Proposed Project area and the species was observed during the August 9, 2021, survey. But, if observed during Proposed Project Activities, the species will be allowed to move out of the area on its own accord. Western pond turtle is sensitive to disturbance and if present, would likely move out of the area upon start of Proposed Project activities. Furthermore, the Proposed Project activities are being conducted to restore the levee to its original contour and grade. While the Proposed Project's impacts on western pond turtle are less than significant, the implementation of AMM BIO-1 and AMM BIO-8 would further ensure avoidance and minimize the potential to affect western pond turtle.

Birds

American Peregrine Falcon (*Falco peregrinus anatum*)

American Peregrine Falcon is delisted from CESA and FESA and is fully protected under California Fish and Game Code. Peregrine Falcon is a medium-sized, dark gray falcon with a dark helmet, pale whitish underparts, and a small, strongly hooked bill. The species has a worldwide range and is found throughout North America; in California, it is resident on the coast and far northern and southern reaches of the state (White et al. 2002). Peregrine Falcon occurs in a wide variety of habitats, including woodlands and open landscape, near water and nest sites. The species hunts by diving and catching prey in mid-air; it primarily consumes birds, but also will hunt for bats and steal prey from other raptors (White et al. 2002). Nests consist of a scrape or depression on cliffs or human-made structures such as tall buildings. Breeding occurs from March through August (White et al. 2002).

The Proposed Project's impacts on American Peregrine Falcon are less than significant. The closest CNDDB occurrence is more than 10 miles away. There is suitable foraging habitat near the Proposed Project area. Most of the Proposed Project activities will begin at the end of nesting bird season; but nesting bird surveys and other wildlife surveys will be conducted prior to Proposed Project activities. While the Proposed Project's impacts on American Peregrine Falcon are less than significant, the implementation of AMM BIO-1 and AMM BIO-4 would further ensure avoidance and minimize the potential to affect American Peregrine Falcon.

Black-crowned Night Heron (*Nycticorax nycticorax*), Double-crested Cormorant (*Phalacrocorax auritus*), Great Blue Heron (*Ardea herodias*), and Great Egret (*Ardea alba*)

Tree-nesting waterbirds, specifically Black-crowned Night Heron, Double-crested Cormorant, Great Blue Heron, and Great Egret typically use rookeries (colonial nest sites) that often include interspecies nesting and roosting with other species in this group. These species are widely distributed across North America. Nesting habitat includes mature riparian trees and snags adjacent to water. The species forage by stalking in aquatic habitats for fish, small birds, mammals, reptiles, and amphibians. Tree-nesting waterbirds tend to exhibit high fidelity to rookery sites. While most species need mature, riparian trees, rookeries for Black-crowned Night Heron have also been located in riparian scrub (California Department of Water Resources 2011). Breeding occurs between February and August at these rookeries (California Department of Fish and Wildlife 2018).

The Proposed Project's impacts on these species are less than significant. While there is potential suitable habitat within and adjacent to the Proposed Project area, they are not limited to this area and can easily move on their own accord to find additional suitable habitat nearby during Proposed Project activities. Furthermore, these species were not

observed during any of the 2021 surveys. Additional nesting bird surveys and other wildlife surveys will be conducted prior to Proposed Project activities. Additionally, the closest CNDDB occurrences for all these species are farther than 1 mile from the Proposed Project area. Additional wildlife surveys will be conducted prior to the start of Proposed Project activities. While the Proposed Project's impacts on these four species are less than significant, the implementation of AMM BIO-1, AMM BIO-3, and AMM BIO-5 would further ensure avoidance and minimize the potential to affect Black-crowned Night Heron, Double-crested Cormorant, Great Blue Heron, and Great Egret.

Cooper's Hawk (*Accipiter cooperii*)

Cooper's Hawk is included on the CDFW Watch List. Cooper's Hawk is a crow-sized woodland raptor with orange-red eyes, blue-gray mantle feathers, barred underparts, and a dark crown. The species is found across North America from Southern Canada to Northern Mexico (Rosenfield et al 2019) and occurs throughout most of California where appropriate habitat exists. Habitat includes riparian and oak woodland, and trees in rural and suburban areas adjacent to foraging habitat. Cooper's Hawk forages and nests in live oak, riparian deciduous, or other forests where it hunts primarily for small birds and mammals (California Department of Fish and Wildlife 1990a). Nests are built in mature trees, usually near streams. Breeding occurs from March through August, with peak activity from May through July (California Department of Fish and Wildlife 1990a).

The Proposed Project's impacts on Cooper's Hawk are less than significant. The closest CNDDB occurrence is more than 6 miles away. While there is suitable nesting and foraging habitat within the Proposed Project area, the Proposed Project activities are being conducted to restore the levee to its original contour and grade. Most of the Proposed Project activities will begin at the end of nesting bird season; but nesting bird surveys and other wildlife surveys will be conducted prior to Proposed Project activities. While the Proposed Project's impacts on Cooper's Hawk are less than significant, the implementation of AMM BIO-1 and AMM BIO-4 would further ensure avoidance and minimize the potential to affect Cooper's Hawk.

Grasshopper Sparrow (*Ammodramus savannarum*)

Grasshopper Sparrow is identified as a CDFW Species of Special Concern (California Department of Fish and Wildlife 2021). The Grasshopper Sparrow is a small sparrow lacking distinct markings (Vickery 1996). The bird is an uncommon and local summer resident and breeder in the foothills and lowlands west of the Cascade-Sierra Nevada crest from Mendocino and Trinity counties south to San Diego County. It occurs in dry, dense grasslands, especially those with a variety of grasses and tall forbs and scattered shrubs for singing perches. The species may form semi-colonial breeding groups but do not form flocks in winter (California Department of Fish and Wildlife 2018). Breeding occurs from early April to mid-July, with peak activity in May and June.

The Proposed Project's impacts on Grasshopper Sparrow are less than significant, as most of the Proposed Project area is made up of highly disturbed habitat (light industrial), and no suitable grassland habitat is located within the Proposed Project area. The closest CNDDB occurrence is more than 10 miles away. Proposed Project activities will begin at the end of nesting bird season; but, a nesting bird survey and other wildlife surveys will be conducted prior to the beginning of the Proposed Project activities. While the Proposed Project's impacts on Grasshopper Sparrow are less than significant, the implementation of AMM BIO-1 and AMM BIO-3 would further ensure avoidance and minimize the potential to affect Grasshopper Sparrow.

Merlin (*Falco columbarius*)

Merlin is a CDFW Watch List species (California Department of Fish and Wildlife 1999d). Merlin is a small, dark-colored falcon with sharply pointed wings, broad chest, and medium-length tail. This species has a broad geographical range throughout the northern hemisphere and can be observed in California during the non-breeding season. During migration Merlin use grasslands, open forests, and coastal areas. They winter in similar habitats across the western United States. Breeding occurs in the northern portions of North America (Warkentin et al. 2005).

The Proposed Project's impacts on Merlin are less than significant. While there is suitable foraging habitat near the Proposed Project area, the closest CNDDB occurrence is almost 5 miles away, and this species was not observed during any of the 2021 site surveys. Additional wildlife surveys will be conducted prior to Proposed Project activities. While the Proposed Project's impacts on Merlin are less than significant, the implementation of AMM BIO-1 and AMM BIO-4 would further ensure avoidance and minimize the potential to affect Merlin.

Song Sparrow "Modesto" Population (*Melospiza melodia*)

Song Sparrow "Modesto" population (Modesto Song Sparrow) is a CDFW Priority 3 Species of Special Concern. While Song Sparrow ranges widely throughout North America; the Modesto population is endemic to the north-central portion of the Central Valley and is ubiquitous in the Delta (Gardali 2008). Modesto Song Sparrow uses emergent marsh and riparian scrub habitats (Grinnell and Miller 1944), In addition, the species has been observed to nest in valley oak riparian forests with a dense blackberry understory, vegetated irrigation canals and levees, and recently planted Valley Oak restoration sites (Gardali 2008). Breeding occurs from April to August (California Department of Fish and Wildlife 1990f).

The Proposed Project's impacts on Modesto Song Sparrow are less than significant. There is suitable nesting and foraging habitat within the Proposed Project area, the closest CNDDB occurrence is less than 1 mile away; but, this species was not observed during any of the 2021 site surveys. Most of the Proposed Project activities will begin at

the end of nesting bird season; but, additional nesting bird surveys and other wildlife surveys will be conducted prior to Proposed Project activities. Proposed Project activities are being conducted to restore the levee to its original contour and grade. While the Proposed Project's impacts on Modesto Song Sparrow are less than significant, the implementation of AMM BIO-1 and AMM BIO-3 would further ensure avoidance and minimize the potential to affect Modesto Song Sparrow.

Swainson's Hawk (*Buteo swainsoni*)

Swainson's Hawk is listed as threatened under CESA (California Natural Diversity Database 2021). Swainson's Hawk is a medium-sized hawk with tapered wings that have contrasting light wing lining and dark flight feathers (Bechard et al. 2010). It is a migrant and breeding resident of California and travels from as far south as Argentina to breed in the California Central Valley. Currently, the species is most common in California in the Central Valley and Great Basin. The species favors open habitats, such as hay and alfalfa fields, pastures, grain crops, and row crops, and may be seen perched atop adjacent fence posts and overhead sprinkler systems for foraging. Nesting habitat includes mature trees in or near riparian habitat; trees in urban or rural neighborhoods are also used. Breeding occurs from late March to late August, with peak activity from late May through July (California Department of Fish and Wildlife 2018).

The Proposed Project's impacts on Swainson's Hawk are less than significant. Although there is marginal foraging habitat within the project footprint, there is suitable nesting habitat within the Proposed Project area, and suitable foraging habitat nearby. The closest recorded CNDDB occurrence is 0.37 mile east of the Proposed Project. But the species was not observed during any of the 2021 site surveys. Additionally, Proposed Project activities will begin at the end of nesting bird season at the time when Swainson's Hawks are historically beginning to migrate out of Sacramento County. Additional nesting bird surveys and wildlife surveys will be conducted prior to the start of Proposed Project activities. While the Proposed Project's impacts on Swainson's Hawk are less than significant, the implementation of AMM BIO-1 and AMM BIO-4 would further ensure avoidance and minimize the potential to affect Swainson's Hawk.

Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)

Western Yellow-billed Cuckoo is listed as threatened under ESA and Endangered under CESA. Western Yellow-billed Cuckoo is a slender bird with brown plumage on its back and white below, long tail with black and white spots, and a curved yellow bill. The species' historical breeding distribution extended throughout western North America, including the Central Valley, where it was considered common (Belding 1890). Currently, the only known populations of breeding Western Yellow-billed Cuckoo are in several disjunct locations in California, Arizona, and western New Mexico (Halterman 1991; Johnson et al. 2007; Dettling et al. 2015; Stanek 2014; Parametrix Inc. and Southern Sierra Research Station 2015). Western Yellow-billed Cuckoo winters in South America

from Venezuela to Argentina (Hughes 2015; Sechrist et al. 2012). The Western Yellow-billed Cuckoo is a riparian obligate species, primarily willow-cottonwood riparian forest, but uses other tree species such as white alder (*Alnus rhombifolia*) and box elder (*Acer negundo*) in some areas, including formerly occupied sites along the Sacramento River (Laymon 1998). Western Yellow-billed Cuckoo is a highly secretive species that forages for insects and requires large insects to feed their nestlings. Nests are primarily in willow (*Salix* spp.) trees; but other tree species are occasionally used, including Fremont cottonwood (*Populus fremontii*) and alder. They arrive at California breeding grounds between May and July, but primarily in June (Gaines and Laymon 1984; Hughes 2015; U.S. Fish and Wildlife Service 2014); breeding occurs in mid-June to August (California Department of Fish and Wildlife 1999c). Western yellow-billed cuckoos are not known to nest in or near the Proposed Project area, and the riparian habitat patch is not large enough, nor does it have the floodplain function necessary, to support breeding (Laymon 1998; Laymon 1998; Greco 2013; as a result, the Proposed Project would not affect nesting Western Yellow-billed Cuckoo. But because there is a known breeding population on the Sacramento River north of the study area (Dettling et al. 2015), it is assumed that individuals may migrate through the region.

The Proposed Project's impacts on Western Yellow-billed Cuckoo are less than significant. There is suitable nesting and foraging habitat within the Proposed Project area; but, the species was not observed during any of the 2021 site surveys, and the closest CNDDB occurrence is more than 2 miles away. While Proposed Project activities will begin at the end of nesting bird season, nesting bird surveys will be conducted prior to the start of Proposed Project activities. If nests are observed a buffer will be established and nests will be monitored for stressed behavior during the Proposed Project activities. Proposed Project activities are being conducted to restore the levee to its original contour and grade. While the Proposed Project's impacts on Western Yellow-billed Cuckoo are less than significant, the implementation of AMM BIO-1 and AMM BIO-3 would further ensure avoidance and minimize the potential to affect Western Yellow-billed Cuckoo.

White-tailed Kite (*Elanus leucurus*)

White-tailed Kite is designated as Fully Protected under California Fish and Game Code (California Natural Diversity Database 2021). This medium-sized raptor has long wings and tail, and gray and white plumage with black wing patches (Dunk 1995). Although this species is widely distributed in North America, the majority occur in California. It forages for mainly small mammals in savannas, open woodlands, marshes, desert grassland, partially cleared lands, and agricultural fields. It nests in trees with dense canopies. Breeding occurs from February to October (California Department of Fish and Wildlife 2018). The closest recorded CNDDB occurrence is 2.6 miles southeast of the Proposed Project.

The Proposed Project's impacts on White-tailed Kite are less than significant. The closest CNDDB occurrence is more than 3 miles away. There is suitable nesting and foraging habitat within the Proposed Project area and the Proposed Project activities will begin at the end of nesting bird season; but the species has not been observed during any of the 2021 site surveys, and nesting bird surveys will be conducted prior to the start of Proposed Project activities. The Proposed Project activities are being conducted to restore the levee to its original contour and grade. While the Proposed Project's impacts on White-tailed Kite are less than significant, the implementation of AMM BIO-1, and AMM BIO-4 would further ensure avoidance and minimize the potential to affect White-tailed Kite.

Mammals

American badger (*Taxidea taxus*)

The American badger is identified as a CDFW Species of Special Concern (California Department of Fish and Wildlife 2021). American badger is a somewhat large, stout, flat, and shaggy-bodied mammal with powerful, short legs for digging, a slightly upturned snout, and a relatively short tail that is moderately furred. American badger is an uncommon solitary species that is widely distributed throughout the state except in the North Coast, from below sea level to more than 12,000 feet. The home range of the American badger usually varies in size between 5 and 1,800 acres but can become much larger while the male tries to locate receptive females in the area. This species inhabits a variety of open, arid habitats but is most abundant in drier open stages of most shrub, forest, and herbaceous habitats with friable soils for burrowing. Natal dens are constructed in dry, sandy soil with sparse overstory. Young are born in March and April and disperse after three to four months. The closest recorded CNDDB occurrence is within the Proposed Project area, but it was recorded on November 22, 1938. There are no other CNDDB occurrences within 10 miles of the Proposed Project area.

The Proposed Project's impacts on American badger are less than significant. Upland habitat within the Proposed Project includes a light industrial area and only provides marginal habitat for this species. While American badgers have had occurrences in the area historically, no observations of this species or signs of presence were made during any of the 2021 surveys. While the Proposed Project's impacts on American badger are less than significant, the implementation of AMM BIO-1 during Proposed Project activities would further ensure avoidance and minimize the potential to affect American badger.

Hoary bat (*Lasiurus cinereus*)

Hoary bat is identified by the Western Bat Working Group as Moderate priority. It is a large bat that has a coat of dense, dark brown pelage with a frosted appearance. This species is the most widespread North American bat and may be found nearly everywhere in California from sea level to 13,200 feet, although its distribution is patchy

in southeastern deserts. It is a common, solitary species that winters along the coast and in southern California, breeds inland and north of the winter range. Hoary bat generally roosts in dense foliage of medium to large trees that are hidden from above, with few branches below, and have ground cover of low reflectivity. This species prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for foraging. Breeding habitat includes all woodlands and forests with medium- to large-size trees and dense foliage. Hoary bat mate in the fall in their winter range, with delayed fertilization until the following spring. Young are born from mid-May through early July (California Department of Fish and Wildlife 1990j).

The Proposed Project's impacts on hoary bat are less than significant. Although there is suitable roosting habitat within the Proposed Project area, the closest CNDDB occurrence is 13 miles away and no observations of this species or evidence of this species were made during any of the 2021 site surveys. Wildlife surveys will be conducted by a qualified biologist prior to the start of Proposed Project activities; any identified roosts will be avoided, and a buffer will be established. All Proposed Project activities will be conducted during daylight hours and will be temporary and minor in scope. Furthermore, any tree limbing or removal will be done after a pre-construction survey has been conducted and approval from a qualified biologist has been given. While the Proposed Project's impacts on hoary bat are less than significant, the implementation of AMM BIO-1 and AMM BIO-9 during Proposed Project activities would further ensure avoidance and minimize the potential to affect hoary bat.

Western red bat (*Lasiurus blossevillii*)

Western red bat is identified as a CDFW Species of Special Concern. It is a medium-sized bat with mottled reddish grayish pelage but can range from bright orange to yellow-brown, and short rounded ears. This species is locally common in some areas of California, occurring from Shasta County to the Mexico border, west of the Sierra Nevada/Cascade crest and deserts. Their winter range includes western lowlands and coastal regions south of San Francisco Bay.

Short migrations occur between summer and winter ranges, and migrants may be found outside the normal range. Roosting habitat includes forests and woodlands from sea level up through mixed conifer forests. Western red bat roost primarily in trees (less often in shrubs), typically in edge habitats adjacent to streams, fields, or urban areas. The species prefers roost sites that are protected from above, open below, and located above dark ground cover. They form nursery colonies, and family groups are known to roost together. Foraging habitat includes grasslands, shrublands, open woodlands and forests, and croplands. Mating occurs in August and September, with delayed fertilization until the following spring, and young born from late May through early July (California Department of Fish and Wildlife 1990i).

The Proposed Project's impacts on western red bat are less than significant. Although there is suitable roosting habitat within the Proposed Project area, no observations of

this species or evidence of the species were made during any of the 2021 site surveys, and the closest CNDDB occurrence is 9 miles away. Wildlife surveys will be conducted by a qualified biologist prior to the start of Proposed Project activities; any identified roosts will be avoided, and a buffer will be established. All Proposed Project activities will be conducted during daylight hours and will be temporary and minor in scope. While the Proposed Project's impacts on western red bat are less than significant, the implementation of AMM BIO-1 and AMM BIO-9 during Proposed Project activities would further ensure avoidance and minimize the potential to affect western red bat.

Invertebrates

Crotch bumble bee (*Bombus crotchii*)

Crotch bumble bee has a NatureServe ranking of G2G3S3 and is included on CDFW's Special Animals List but is not listed under ESA or CESA. This species is a generalist, colonial nesting bee. The current range of this species in California is from coastal California to the Sierra Nevada/Cascade Crest. Habitat for this species is not specific because the food plant genera used by Crotch bumble bee (*Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia,* and *Eriogonum*) are widely distributed in different habitats. Like most other species of bumble bees, Crotch bumble bee typically nests in underground cavities such as animal burrows, though nests have also been reported from above-ground structures that provide suitable cavities. Colonies are established by mated queens who produce female workers to forage for pollen and nectar, defend the colony, and feed developing larvae, with individual colonies remaining active for only one season (Koch et al. 2012).

The Proposed Project's impacts on Crotch bumble bee are less than significant. The closest CNDDB occurrence is more than 8 miles away. Furthermore, most of the Proposed Project area is classified as unvegetated light industrial and the riparian area provides marginal suitable habitat with sparse food plants for this species. While the Proposed Project's impact will be less than significant on Crotch bumble bee, the implementation of AMM BIO-1 would further ensure avoidance and minimize the potential to affect Crotch bumble bee and suitable habitat.

Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)

Valley elderberry longhorn beetle is listed as threatened under ESA but is not listed under CESA. It has a NatureServe ranking of G3T2S2 and is included on CDFW's Special Animals List. This species is a terrestrial, wood-boring beetle whose larvae feed exclusively on elderberry (*Sambucus* spp.). It is endemic to California, and its known range extends throughout the Central Valley. It typically occurs in riparian or other habitats that support its elderberry host plants, typically less than 500 feet in elevation. Adult beetles emerge in spring and summer and lay eggs on the elderberry leaves. Upon hatching, larvae bore into the stems and create feeding galleries in the pith, where they will reside for several months. Prior to pupation, the larva creates an exit hole, then

returns to the gallery where it pupates. The adult beetle will then emerge approximately one month later. Threats to the species include agricultural conversion, urban development, stream channelization, and channel hardening, which eliminate habitat for the host plant (U.S. Fish and Wildlife Service 2017).

The Proposed Project's impacts on valley elderberry longhorn beetle are less than significant. While the species has the potential to occur in riparian habitats, no elderberry host plants were observed within 200 feet of the Proposed Project area during targeted surveys conducted on December 9, 2021, by a qualified DWR biologist. While the Proposed Project's impacts on valley elderberry longhorn beetle are less than significant, the implementation of AMM BIO-1 during Proposed Project activities would further ensure avoidance and minimize the potential to affect valley elderberry longhorn beetle.

Fish

Chinook salmon (*Oncorhynchus tshawytscha*)

Central Valley spring-run ESU

The Central Valley (CV) spring-run Chinook salmon ESU is listed as a threatened species under ESA. CV spring-run Chinook salmon are also listed as threatened under CESA. The ESU includes all naturally spawned populations of spring-run Chinook salmon in the Sacramento River and its tributaries in California, and the Feather River Hatchery spring-run Chinook program. The Sacramento River within the Proposed Project area is designated critical habitat for this species (State Water Resources Control Board 2008).

Chinook salmon exhibit two generalized freshwater life history types (Healey 1991). Stream-type adults enter freshwater months before spawning and juveniles reside in freshwater for a year or more following emergence, whereas ocean-type adults spawn soon after entering fresh water and juveniles migrate to the ocean as fry or parr in their first year. Adequate instream flows and cool water temperatures are more critical for the survival of Chinook salmon exhibiting a stream-type life history because of over-summering by adults and juveniles. Spring-run Chinook salmon are somewhat anomalous in that they have characteristics of both stream- and ocean-type races (Healey 1991). Adults enter fresh water in early-late spring and delay spawning until late summer or early fall (stream-type). But most juvenile spring-run Chinook salmon migrate out of their natal stream after only a few months of river life (ocean-type), or they may remain for as long as 15 months within their natal stream. This life-history pattern differentiates the spring-run Chinook from other Sacramento River Chinook runs and from all other populations within the range of Chinook salmon (Hallock and Fisher 1985).

Spring-run Chinook salmon emigration timing is highly variable, as they may migrate downstream as young-of-the-year or as juveniles or yearlings. Peak movement of yearling CV spring-run Chinook salmon in the Sacramento River at Knights Landing

occurs in December, and is high in January, tapering off through the middle of February; but juveniles were also observed between November and the end of February (Snider and Titus 2000).

The Proposed Project's impacts on CV spring-run Chinook salmon and critical habitat are less than significant. Proposed Project activities would only occur during the in-water work window of August 1 to October 31, at a time when special-status fish species, such as CV spring-run Chinook salmon are not likely to be migrating through the Proposed Project area. Furthermore, the Proposed Project activities are temporary in nature and minor in scope. The purpose of the Proposed Project is to restore the levee to its original contour and grade. Activities would not result in degradation of aquatic habitat or water quality conditions, as in-water work is limited to the removal of piles. As a result, turbidity caused by Proposed Project activities would be minimal and temporary in nature. While the Proposed Project's impacts on CV spring-run Chinook salmon are less than significant, the implementation of AMM BIO-1 and AMM BIO-7 would further ensure avoidance and minimize the potential to affect CV spring-run Chinook salmon.

Sacramento River winter-run ESU

The Sacramento River winter-run Chinook salmon ESU was initially listed as a threatened species in August 1989, under emergency provisions of the ESA (National Marine Fisheries Service 1989) and was listed as threatened in a final rule in November 1990 (National Marine Fisheries Service 1990). The ESU consists of only one population confined to the mainstem of the upper Sacramento River in California's Central Valley below Keswick Dam. The ESU was reclassified as endangered under the ESA on January 4, 1994 (National Marine Fisheries Service 1994), because of increased variability of run sizes, expected weak returns as a result of two small year classes in 1991 and 1993, and a 99 percent decline between 1966 and 1991. The National Marine Fisheries Service (NMFS) reaffirmed the listing of the Sacramento River winter-run Chinook salmon ESU as endangered on June 28, 2005 (National Marine Fisheries Service 2005c), and included winter-run Chinook salmon in the Livingston Stone National Fish Hatchery artificial propagation program in the ESU. In addition to the federal listing, Sacramento River winter-run Chinook salmon are listed as endangered under the CESA. The Sacramento River within the Proposed Project area is designated critical habitat for this species (National Oceanic and Atmospheric Administration 2022b).

Sacramento River winter-run Chinook salmon adults enter the Sacramento River basin between December and July; the peak occurs in March (Yoshiyama et al. 1998, Moyle 2002). Because winter-run Chinook salmon use only the Sacramento River system for spawning, adults are likely to migrate upstream primarily along the western edge of the Delta through the Sacramento River corridor. Their migration past Red Bluff Diversion Dam (RBDD) at River Mile 242 begins in mid-December and continues into early August. The majority of the run passes RBDD between January and May, with the peak in mid-March (Hallock and Fisher 1985). The timing of migration may vary somewhat because

of changes in river flows, dam operations, and water year type (Yoshiyama et al. 1998, Moyle 2002). Sacramento River winter-run Chinook salmon migrate into freshwater while still being immature and delay spawning for weeks or months upon reaching their spawning grounds (Healey 1991).

Emigrating juvenile winter-run Chinook salmon pass the RBDD beginning as early as mid-July, typically peaking in September, and can continue through March in dry years (Vogel and Marine 1991; National Marine Fisheries Service 1997). Many juveniles apparently rear in the Sacramento River below RBDD for several months before they reach the Delta (Williams 2006). From 1995 to 1999, all winter-run Chinook salmon outmigrating as fry passed the RBDD by October, and all outmigrating presmolts and smolts passed the RBDD by March (Martin et al. 2001). Juvenile winter-run Chinook salmon are present in the Delta primarily from November through early May based on data collected from trawls in the Sacramento River at West Sacramento (River Mile 55) (U.S. Fish and Wildlife Service 2006b), although the overall timing may extend from September to early May (National Marine Fisheries Service 2012). The timing of migration varies somewhat because of changes in river flows, dam operations, seasonal water temperatures, and hydrologic conditions (water year type).

The Proposed Project's impacts on Sacramento River winter-run Chinook salmon and critical habitat are less than significant. Proposed Project activities would only occur during the in-water work window of August 1 to October 31, at a time when special-status fish species, such as Sacramento River winter run Chinook salmon are not likely to be migrating through the Proposed Project area. Furthermore, the Proposed Project activities are temporary in nature and minor in scope. The purpose of the Proposed Project is to restore the levee to its original contour and grade. Activities would not result in degradation of aquatic habitat or water quality conditions, as in-water work is limited to the removal of piles. As a result, turbidity caused by Proposed Project activities would be minimal and temporary in nature. While the Proposed Project's impacts on Sacramento River winter-run Chinook salmon are less than significant, the implementation of AMM BIO-1 and AMM BIO-7 would further ensure avoidance and minimize the potential to affect Sacramento River winter-run Chinook salmon.

Delta Smelt (*Hypomesus transpacificus*)

Delta Smelt is listed as a threatened species under the ESA and was listed as a threatened species under the CESA in 1993. In 2009, Delta Smelt was reclassified as an endangered species under the CESA. The 2010 five-year status review recommended up-listing Delta Smelt from threatened to endangered status under the ESA (U.S. Fish and Wildlife Service 2010a). But, as of the time of this writing, Delta Smelt remain listed as threatened under the ESA. The Sacramento River within the Proposed Project area is designated critical habitat for this species (U.S. Fish and Wildlife Service 2022).

Delta Smelt is endemic to the San Francisco Estuary, found nowhere else in the world (Bennett 2005). The Delta functions as a migratory corridor, as a rearing habitat, and as spawning habitat for Delta Smelt. Overall, the Delta Smelt life cycle is completed in the brackish and tidal freshwater reaches of the upper San Francisco Estuary. In addition, a freshwater resident life history type was found by Bush (2017), which primarily occurs in the Cache Slough region year-round (Sommer et al. 2011). Salinity requirements vary by life stage. Apart from spawning and egg-embryo development, the distribution and movements of all life stages are influenced by transport processes associated with water flows in the estuary, which also affect the quality and location of suitable open water habitat (Dege and Brown 2004; Feyrer et al. 2007; Nobriga et al. 2008). Delta Smelt is weakly anadromous and undergoes a spawning migration from the low-salinity zone (1–6 parts per thousand [ppt]) to freshwater in most years (Grimaldo et al. 2009; Sommer et al. 2011). Most of the later life-stage Delta smelt captured during the fall-midwater trawl were collected in the 1 to 5 ppt salinity zone (Kimmerer et al. 2013). Spawning migrations occur between late December and late February, typically during “first flush” periods when inflow and turbidity increase on the Sacramento and San Joaquin rivers (Grimaldo et al. 2009, Sommer et al. 2011). Adult smelt does not spawn immediately after migration to freshwater but appear to stage in upstream habitats (Sommer et al. 2011). Spawning primarily occurs during April through mid-May (Moyle 2002). There is a wide range of perspectives in the scientific literature regarding the extent to which the spatial distribution of Delta Smelt co-varies with X2 (habitat suitability and availability) with more recent data and analyses suggesting factors other than X2 explain the distribution of the species (Murphy and Hamilton 2013; Manly et al. 2015; Latour 2016; Polanksy et al. 2018, Murphy and Weiland 2019). Dege and Brown (2004) found that larvae less than 20 milimeters rear 3–12 miles (5–20 kilometers) upstream of X2 (Dege and Brown 2004; Sommer and Mejia 2013). As larvae grow and water temperatures increase in the Delta (~73°F [23 °C]), their distribution shifts toward the low salinity zone (Dege and Brown 2004; Nobriga et al. 2008). By fall, the centroid of Delta Smelt distribution is tightly coupled with X2 (Sommer et al. 2011; Sommer and Mejia 2013). While salinity is generally seen as a key driver of Delta smelt distribution, more recent research suggests other factors, such as water velocity (Bever et al. 2016), may be an important predictor of Delta Smelt presence. Similarly, Murphy and Weiland (2019) demonstrate salinity alone may not be the best predictor of Delta Smelt abundance and distribution.

The Proposed Project’s impacts on Delta Smelt and critical habitat are less than significant. The closest CNDDB occurrence is more than 5 miles away. The Proposed Project activities would only occur during the in-water work window of August 1 to October 31, at a time when special-status fish species, such as Delta Smelt are expected to be found in the Proposed Project area. Furthermore, the Proposed Project activities are temporary in nature and minor in scope. The purpose of the Proposed Project is to restore the levee to its original contour and grade. Activities would not result in degradation of aquatic habitat or water quality conditions, as in-water work is limited to

the removal of piles. As a result, turbidity caused by Proposed Project activities would be minimal and temporary in nature. While the Proposed Project's impacts on Delta Smelt are less than significant, the implementation of AMM BIO-1 and AMM BIO-7 would further ensure avoidance and minimize the potential to affect Delta Smelt.

Green Sturgeon (*Acipenser medirostris*)

There are two distinct population segments (DPSs) of North American Green Sturgeon. The northern DPS, which includes fish spawned in the Eel River and northward, and the southern DPS, which includes all fish spawned south of the Eel River. The northern DPS currently spawns in the Klamath River in California and the Rogue River in Oregon and is listed as a Species of Concern (National Marine Fisheries Service 2004). Only the southern DPS, which is listed as a threatened species under ESA, is found in the Delta and the Sacramento River and its tributaries (National Marine Fisheries Service 2006a). The Sacramento River within the Proposed Project area is designated critical habitat for this species (National Oceanic and Atmospheric Administration 2022c).

Included in the listing are Green Sturgeon originating from the Sacramento River basin, including the spawning population in the Sacramento River and Green Sturgeon living in the Sacramento River, the Delta, and the San Francisco Estuary.

Adult North American Green Sturgeon are believed to spawn every three to five years but can spawn as frequently as every two years (National Marine Fisheries Service 2005a) and reach sexual maturity at an age of 15 to 20 years, with males maturing earlier than females. Adult Green Sturgeon enter San Francisco Bay in late winter through early spring and migrate to spawning areas in the Sacramento River primarily from late February through April. Spawning primarily occurs April through late July although late summer and early fall spawning may also occur based on the presence of larvae in the fall (Heublein et al. 2017).

Little is known about rearing, migratory behavior, and general emigration patterns of juvenile southern DPS Green Sturgeon. Based on captures of juveniles in the Sacramento River near Red Bluff, it is likely that juveniles rear near spawning habitat for a few months or more before migrating to the Delta (Heublein et al. 2017). Juvenile Green Sturgeon continue to exhibit nocturnal behavior beyond the metamorphosis from larval to juvenile stages. After approximately 10 days, larvae begin feeding and growing rapidly, and young Green Sturgeon appear to rear for the first one to two months in the upper Sacramento River between Keswick Dam and Hamilton City (California Department of Fish and Wildlife 2002). Length measurements estimate juveniles to be two weeks old (24 to 34 millimeters [0.95 to 1.34 inch] fork length) when they are captured at the Red Bluff Diversion Dam (California Department of Fish and Wildlife 2002; U.S. Fish and Wildlife Service 2002), and three weeks old when captured further downstream at the Glenn-Colusa facility (Van Eenennaam et al. 2001). Growth is rapid as juveniles reach as much as 30 centimeters (11.8 inches) in the first year and more

than 60 centimeters (24 inches) in the first two to three years (Nakamoto et al. 1995). Juveniles spend one to four years in freshwater and estuarine habitats before they enter the ocean (Nakamoto et al. 1995). According to Heublein et al. (2009), in 2006 all tagged adult Green Sturgeon emigrated from the Sacramento River prior to September. Lindley et al. (2008) found frequent large-scale migrations of Green Sturgeon along the Pacific Coast. Kelly et al. (2007) reported that Green Sturgeon enters the San Francisco Estuary during the spring and remains until fall. Juvenile and adult Green Sturgeon enter coastal marine waters after making significant long-distance migrations with distinct directionality thought to be related to resource availability.

The Proposed Project's impacts on Green Sturgeon and critical habitat are less than significant. The Proposed Project activities would only occur during the in-water work window of August 1 to October 31, at a time when special-status fish species, such as Green Sturgeon are not likely to be migrating through the Proposed Project area. Furthermore, the Proposed Project activities are temporary in nature and minor in scope. The purpose of the Proposed Project is to restore the levee to its original contour and grade. Activities would not result in degradation of aquatic habitat or water quality conditions, as in-water work is limited to the removal of piles. As a result, turbidity caused by Proposed Project activities would be minimal and temporary in nature. While the Proposed Project's impacts on Green Sturgeon are less than significant, the implementation of AMM BIO-1 and AMM BIO-7 would further ensure avoidance and minimize the potential to affect Green Sturgeon.

Longfin Smelt (*Spirinchus thaleichthys*)

The Bay-Delta population of Longfin Smelt is designated as a candidate for listing under the ESA (U.S. Fish and Wildlife Service 2012) and, since June 26, 2009, the Longfin Smelt is listed as threatened under the CESA. Longfin Smelt is anadromous and semelparous, moving from saline to brackish or freshwater for spawning from November to May (Moyle 2002; Rosenfield and Baxter 2007) Longfin Smelt usually live for two years, spawn, and then die (Rosenfield 2010). Peak spawning takes place in January and February of most years and appears to be centered in brackish water (1–8 ppt); their habitat typically extends from San Pablo Bay to the confluence of the Sacramento River and San Joaquin River. Newly hatched Longfin Smelt larvae are planktonic and probably do not control their position in the water column before they develop an air bladder. After their air bladder is developed (~12 milimeter standard length) they are capable of controlling their position in the water column by undergoing reverse diel vertical migrations, which allows them to maintain position on the axis of the estuary (Bennett et al. 2002).

The geographic distribution of larval and early juvenile life stages of Longfin Smelt may be influenced by freshwater inflows to the Delta during late winter and spring, although the mechanisms are complicated and not fully understood (Hieb and Baxter 1993; Baxter 1999; Dege and Brown 2004). Juvenile Longfin Smelt move seaward, mostly west of

Carquinez Bridge, by late summer and fall. Rosenfield and Baxter (2007) suggest that juvenile Longfin Smelt seek cooler and deeper water in the summer months.

The Proposed Project's impacts on Longfin Smelt are less than significant. The closest CNDDB occurrence is within the Proposed Project area; but the Proposed Project activities would only occur during the in-water work window of August 1 to October 31, at a time when special-status fish species, such as Longfin Smelt are not likely to be migrating through the Proposed Project area. Furthermore, the Proposed Project activities are temporary in nature and minor in scope. The purpose of the Proposed Project is to restore the levee to its original contour and grade. Activities would not result in degradation of aquatic habitat or water quality conditions, as in-water work is limited to the removal of piles. As a result, turbidity caused by Proposed Project activities would be minimal and temporary in nature. While the Proposed Project's impacts on Longfin Smelt are less than significant, the implementation of AMM BIO-1 and AMM BIO-7 would further ensure avoidance and minimize the potential to affect Longfin Smelt.

Sacramento Splittail (*Pogonichthys macrolepidotus*)

The Sacramento Splittail was listed as threatened under the ESA on February 8, 1999 (National Marine Fisheries Service 1999). This ruling was challenged by two lawsuits (San Luis & Delta-Mendota Water Authority v. Anne Badgley et al. and State Water Contractors et al. v. Michael Spear et al.). On June 23, 2000, the Federal Eastern District Court of California found the ruling to be unlawful and on September 22 of the same year remanded the determination back to the USFWS for re-evaluation of their original listing decision. Upon further evaluation, Splittail was removed from the ESA on September 22, 2003 (U.S. Fish and Wildlife Service 2003). On August 13, 2009, the Center for Biological Diversity (2009) challenged the 2003 decision to remove Splittail from the ESA. But, on October 7, 2010, the USFWS found that listing of Splittail was not warranted (U.S. Fish and Wildlife Service 2010b). The Splittail is designated as a species of special concern by the CDFW.

Mature Splittail begin a gradual upstream migration toward spawning areas sometime between late November and late January, with larger Splittail migrating earlier (Caywood 1974; Moyle et al. 2004). The relationship between migrations and river flows is poorly understood, but it is likely that Splittail have a positive behavioral response to increases in flows and turbidity. Feeding in flooded riparian areas in the weeks just prior to spawning may be important for later spawning success and for postspawning survival.

The upstream movement of Splittail is closely linked with flow events from February to April that inundate floodplains and riparian areas (Garman and Baxter 1999; Harrell and Sommer 2003). Seasonal inundation of shallow floodplains provides both spawning and foraging habitat for Splittail (Caywood 1974; Daniels and Moyle 1983; Baxter et al. 1996; Sommer et al. 1997). Evidence of Splittail spawning on floodplains has been found on the San Joaquin and Sacramento rivers. In the plan area, Splittail spawn on inundated

floodplains in the Yolo and Sutter bypasses, which are extensively flooded in wet years, and along the Cosumnes River area from February to July (Sommer et al. 1997, 2001, 2002; Crain et al. 2004; Moyle et al. 2004). When floodplain inundation does not occur in the Yolo or Sutter bypasses, adult Splittail migrate farther upstream to suitable habitat along channel margins or flood terraces; spawning in such locations occurs in all water year types (Feyrer et al. 2005).

The Proposed Project's impacts on Sacramento Splittail are less than significant. The closest CNDDB occurrence is within the Proposed Project area; but, the Proposed Project activities would only occur during the in-water work window of August 1 through October 31, at a time when special-status fish species, such as Sacramento Splittail are not likely to be migrating through the Proposed Project area. Furthermore, the Proposed Project activities are temporary in nature and minor in scope. The purpose of the Proposed Project is to restore the levee to its original contour and grade. Activities would not result in degradation of aquatic habitat or water quality conditions, as in-water work is limited to the removal of piles. As a result, turbidity caused by Proposed Project activities would be minimal and temporary in nature. While the Proposed Project's impacts on Sacramento Splittail are less than significant, the implementation of AMM BIO-1 and AMM BIO-7 would further ensure avoidance and minimize the potential to affect Sacramento Splittail.

Steelhead – Central Valley DPS (*Oncorhynchus mykiss irideus* pop. 11)

The California Central Valley (CCV) steelhead ESU was listed as a threatened species under ESA on March 19, 1998 (U.S. Fish and Wildlife Service 1998b). In addition, the species is also listed as threatened under the CESA. On November 4, 2005, the NMFS proposed that all west coast steelhead be reclassified from ESUs to distinct population segments (DPSs) and proposed to retain CCV steelhead as threatened (National Marine Fisheries Service 2005b). On January 5, 2006, after reviewing the best available scientific and commercial information in a status review (Good et al. 2005), NMFS issued its final rule to retain the status of CCV steelhead as threatened and applied its hatchery listing policy to include the Coleman National Fish Hatchery and Feather River Hatchery steelhead programs as part of the DPS (National Marine Fisheries Service 2006b). The Sacramento River within the Proposed Project area is designated critical habitat for this species (State Water Resources Control Board 2008).

In the last five-year status review, NMFS determined that the CCV steelhead DPS should remain classified as threatened. In addition, based on new genetic evidence by Pearse and Garza (2015), NMFS recommended that steelhead originating from the Mokelumne River Hatchery be added to the CCV steelhead DPS, as Feather River Hatchery fish are considered to be a native Central Valley stock and are listed as part of the DPS (National Marine Fisheries Service 2016a).

Steelhead have two life-history types: stream-maturing and ocean-maturing. Stream-maturing steelhead enter fresh water in a sexually immature condition and require several months to mature before spawning, whereas ocean-maturing steelhead enter freshwater with mature gonads and spawn shortly after river entry. A variation of the two forms occurs in the Central Valley and primarily migrates into the system in the fall, then holds in a suitable habitat until spawning during the winter and early spring (McEwan and Jackson 1996). Peak immigration seems to have occurred historically in the fall from late September to late October (Hallock 1989), with peak spawning typically occurring January through March (Hallock et al. 1961; McEwan and Jackson 1996). Unlike Pacific salmon, steelhead are capable of spawning more than once before death (Busby et al. 1996). Most juvenile steelhead spend two years rearing, although some spend less, and a very few spend more (Hallock et al. 1961). Central Valley steelhead typically spend two years in the ocean before returning to their natal stream to spawn. About 70 percent of CCV steelhead spend two years within their natal streams before migrating out of the Sacramento-San Joaquin system as smolts (Hallock et al. 1961). Juvenile steelhead smolts emigrate primarily from natal streams in response to the first heavy runoff in the late winter through spring (Hallock et al. 1961). Emigrating CCV steelhead use the lower reaches of the Sacramento and San Joaquin rivers and the Delta as a migration corridor to the ocean. Nobriga and Cadrett (2001) verified these temporal findings (spring migration) based on analysis of captures in USFWS salmon monitoring conducted near Chipps Island.

The Proposed Project's impacts on CCV steelhead and critical habitat are less than significant. The closest CNDDB occurrence is within the Proposed Project area, but the Proposed Project activities would only occur during the in-water work window of August 1 to October 31, at a time when special-status fish species, such as CCV steelhead are not likely to be migrating through the Proposed Project area. Furthermore, the Proposed Project activities are temporary in nature and minor in scope. The purpose of the Proposed Project is to restore the levee to its original contour and grade. Activities would not result in degradation of aquatic habitat or water quality conditions, as in-water work is limited to the removal of piles. As a result, turbidity caused by Proposed Project activities would be minimal and temporary in nature. While the Proposed Project's impacts on CCV steelhead are less than significant, the implementation of AMM BIO-1 and AMM BIO-7 would further ensure avoidance and minimize the potential to affect CCV steelhead.

2.1.4.4 Discussion

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

Less than significant impact. As discussed above and noted in Appendix A, the Proposed Project area provides potentially suitable habitat for 31 special-status species: Delta mudwort, Delta tule pea, Mason's lilaeopsis, Suisun Marsh aster, woolly rose-mallow, giant garter snake, western pond turtle, American Peregrine Falcon, Black-crowned Night Heron, Cooper's Hawk, Grasshopper Sparrow, Great Blue Heron, Great Egret, Double-crested Cormorant, Merlin, Song Sparrow "Modesto" Population, Swainson's Hawk, Western Yellow-billed Cuckoo, White-tailed Kite, American badger, hoary bat, western red bat, Crotch bumble bee, valley elderberry longhorn beetle, Chinook salmon (Central Valley spring-run ESU and Sacramento River winter-run ESU), Delta Smelt, Green Sturgeon, Longfin Smelt, Sacramento Splittail, steelhead- California Central Valley (CCV).

While there is suitable aquatic habitat and riparian habitat in the Proposed Project area, the Proposed Project's impacts would be temporary in nature and the Proposed Project's Schedule has been planned to minimize the potential impact to these species and their habitat. In-water work will be conducted in the in-water work window for fish species and the Proposed Project will start at the end of nesting bird season and during the active season of giant garter snake. Furthermore, a majority of the Proposed Project area is comprised of a light industrial area and does not provide suitable habitat to sensitive species. The purpose of the Proposed Project is to restore the levee to its original contour and grade prior to the construction of the fish-screen testing facility and associated features. While the Proposed Project's impacts on any special-status plant and wildlife species are less than significant, the implementation of AMM BIO-1 through AMM BIO-9 would avoid and minimize the potential to impact these species or their habitat.

2.1.4.4.1 Special-Status Plants

The Proposed Project's impacts on special-status plants are less than significant, as these species were not observed within the Proposed Project area during the November 19, 2021, botanical survey. Another botanical survey will be conducted in the spring of 2022 for any special-status plant species in the Proposed Project area. While the Proposed Project's impacts on Delta mudwort, Dela tule pea, Maison's lilaeopsis, Suisun Marsh aster, or woolly rose-mallow are less than significant, the implementation of AMM BIO-1 and AMM BIO-2 during Proposed Project activities would ensure avoidance and minimize the potential to affect special-status plant species.

2.1.4.4.2 Special-Status Wildlife

The Proposed Project's impacts on special-status wildlife species are less than significant. While special status species have the potential to occur in the Proposed Project area, a majority of the Proposed Project area is comprised of a light industrial area, with minimal adjacent riparian, and aquatic habitat. Frequent disturbance and active human presence have been ongoing at and around the Proposed Project area

since the construction of the fish-screen testing facility in 1984. Traffic along SR-160 is frequent, and wildlife in the area are accustomed to these disturbances. While construction of the Proposed Project will add an additional level of disturbance to the site, the Proposed Project is relatively small (approximately 1.25-acres) and would restore the levee to its original contour and grade prior to the construction of the fish-screen testing facility. Construction would be temporary (approximately three months total), and once complete, there would be no operational component of the Proposed Project, and as a result, no potential for operational impacts.

The Proposed Project's impacts to each wildlife species would be less than significant because of the reasons discussed in Section 2.1.4.3.2. While the Proposed Project's impacts are less than significant for giant garter snake, western pond turtle, American Peregrine Falcon, Black-crowned Night Heron, Cooper's Hawk, Grasshopper Sparrow, Great Blue Heron, Great Egret, Double-crested Cormorant, Merlin, Song Sparrow "Modesto" Population, Swainson's Hawk, Western Yellow-billed Cuckoo, White-tailed Kite, American badger, hoary bat, western red bat, Crotch bumble bee, valley elderberry longhorn beetle, Chinook salmon (Central Valley spring-run ESU and Sacramento River winter-run ESU), Delta Smelt, Green Sturgeon, Longfin Smelt, Sacramento Splittail, steelhead- California Central Valley (CCV), the implementation of AMM BIO-1 and AMM BIO-3 through AMM BIO-9 would further ensure avoidance and minimize the potential to impact special status wildlife species.

Reptiles

As noted above, the Proposed Project's impact on western pond turtle and giant garter snake are less than significant. There is suitable habitat for these species within the Proposed Project area and western pond turtle have been observed within the Proposed Project area during past surveys; but surveys will be conducted for these species prior to start of construction. Species will be allowed to move out of the Proposed Project area on their own accord, and work would only occur during daylight hours. Additionally, Proposed Project activities would be temporary in nature, and once construction is complete, the levee would be restored to its original contour and grade. While the Proposed Project's impacts on special-status reptile species are less than significant, the implementation of AMM BIO-1, AMM BIO-6, and AMM BIO-8 would further ensure avoidance and minimize the potential to impact these species.

Birds

As noted above, the Proposed Project's impacts on bird species, including raptors, are less than significant. While Proposed Project activities are planned to begin at the end of nesting season, nesting bird surveys will be conducted prior to the start of Proposed Project activities, and appropriate buffers will be established, if needed. No special-status bird species were observed during any of the 2021 site surveys. Additionally, Proposed Project activities would be temporary in nature, and once construction is complete, the contours and grade of the levee will be restored. While the Proposed

Project's impacts on these species are less than significant the implementation of AMM BIO-1, and AMM BIO-3 through AMM BIO-5 would further ensure avoidance and minimize the potential to impact special-status bird species.

Mammals

As noted above, the Proposed Project's impacts on mammal species are less than significant. The Proposed Project area is highly disturbed and contains little suitable habitat for the American badger. No American badger, or signs of American badger, were observed during environmental surveys in the Proposed Project area. There is suitable roosting habitat for bat species; but, no bats, or signs of bats, were observed during the site surveys. Wildlife surveys will be conducted by a qualified biologist prior to the start of Proposed Project activities, and any wildlife species will be allowed to move out of the project area on their own accord. Furthermore, any tree limbing or removal will be done after a pre-construction survey has been conducted and approval from a qualified biologist has been given. All Proposed Project activities will be conducted during daylight hours and will be temporary and minor in scope. While the Proposed Project's impacts on mammal species are less than significant the implementation of AMM BIO-1 and AMM BIO-9 during Proposed Project activities would further ensure avoidance and minimize the potential to impact special-status mammal species.

Invertebrates

As noted above, the Proposed Project's impacts on invertebrate species are less than significant. The Proposed Project area is highly disturbed and contains marginal suitable habitat for Crotch bumble bee and no elderberry plant was found within 200 feet of the Proposed Project area for valley elderberry longhorn beetle. Proposed Project activities will be temporary and minor in scope. While the Proposed Project's impacts on invertebrate species are less than significant the implementation of AMM BIO-1 during Proposed Project activities would further ensure avoidance and minimize the potential to impact special-status invertebrate species.

Fish

As noted above, the Proposed Project's impacts on Chinook salmon (Central Valley spring-run ESU and Sacramento River winter-run ESU), Delta Smelt, Green Sturgeon, Longfin Smelt, CCV steelhead, and Sacramento Splittail and critical habitat are less than significant. Proposed Project activities would only occur during the in-water work window of August 1 to October 31, at a time when special-status fish species are not likely to be migrating through the Proposed Project area. Furthermore, the Proposed Project activities are temporary in nature and would not result in degradation of aquatic habitat or water quality conditions, as in-water work is limited to the removal of piles. Turbidity caused by Proposed Project activities would be transient. While the Proposed Project's impacts on fish species are less than significant, the implementation of AMM BIO-1, and

AMM BIO-7 would further ensure avoidance and minimize the potential to impact special-status fish species.

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

Less than significant impact. Two sensitive natural communities were identified within the Proposed Project area based on a review of the CNDDB (California Department of Fish and Wildlife 2021). These include Great Valley mixed riparian forest and Great Valley valley oak riparian forest. Further discussion of these habitat types as they relate to the Proposed Project area can be found in the Habitat Types section and the species-specific discussions above.

The purpose of the Proposed Project is to remove the fish-screen testing facility remnants embedded within the levee and restore the levee to its intended condition and integrity, and would not convert any habitat, including riparian habitat. The Proposed Project activities do not include the removal of riparian vegetation. The Proposed Project has been designed in a way to avoid impacts to any sensitive resources and is not expected to have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or the USFWS. The implementation of avoidance and minimization measures during Proposed Project activities would further ensure avoidance and minimize the potential to impact riparian habitat.

c) Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No impact. No State or federally protected wetlands are located within the Proposed Project area. The Proposed Project is located within and adjacent to the Sacramento River, a non-wetland Water of the U.S. and State. Eight catwalk support piles will be removed from a small area (0.00092 acre). This activity would not result in degradation of aquatic habitat or water quality conditions, and turbidity would be minimal and transient. No wetlands are located within the Proposed Project area and adjacent area. As a result, no impacts are anticipated to wetlands as a result of the Proposed Project.

d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than significant impact. The Proposed Project would not substantially interfere with the movement of any native or resident fish species, because the activities would be isolated in area and duration, and would not block, alter, or degrade waterways that

these species use for movement or migration. In-water work would only occur during the in-water work window of August 1 to October 31, at a time when special-status fish species are not likely to be migrating through the area. Furthermore, the Proposed Project activities are temporary in nature (approximately three months) and minor in scope, as the Proposed Project area only encompasses approximately 0.631 acre of open water habitat and in-water work is limited to the removal of piles. Activities would not result in degradation of aquatic habitat or water quality conditions, and turbidity caused by Proposed Project activities would be minimal and transient. Furthermore, the Proposed Project would restore the aquatic and riparian habitats to their intended condition prior to the installation of the fish-screen test facility.

For migrating and foraging birds, the Proposed Project activities are being conducted to restore the levee to its original contour and grade. Because of the limited size (1.25-acres) and duration of the Proposed Project and limited suitable habitat available within the Proposed Project area, it is not anticipated that the Proposed Project activities would interfere with any kind of wildlife movement or migration.

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No impact. The Proposed Project does not conflict with the Sacramento General Plan (SGP) (Sacramento County 2011). The goal of the Natural Resources section of the SGP is to preserve and protect the natural resources of the Delta, promote the protection of remnants of riparian habitat and aquatic habitat, and encourage compatibility between agricultural practices and wildlife habitat. The goal of the Water section of the SGP is to protect and enhance long-term water quality in the Delta for agriculture, municipal, industrial, water-contact recreation, and fish and wildlife habitat uses, as well as all other beneficial uses. The goals of the Levees section are to support the improvement, emergency repair, and long-term maintenance of Delta levees and channels, promote levee rehabilitation and maintenance to preserve the land areas and channel configurations in the Delta as consistent with the objectives of the Delta Protection Act. The Proposed Project will be in compliance with all the policies, goals, and objectives of the SGP. As a result, no impacts are anticipated to conflict with local policies or ordinances as a result of the Proposed Project.

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No impact. The Proposed Project is located within the planned South Sacramento Habitat Conservation Plan (SSHCP) (County of Sacramento 2018). DWR is not a Permit Applicant under the SSHCP, and the Proposed Project activities are not Covered Activities under SSHCP. The Proposed Project activities do not conflict with the goals or measures outlined in the SSHCP. As a result, the Proposed Project is not anticipated to

conflict with the provisions of approved local, regional, or State habitat conservation plans or natural community conservation plans, and there would be no impact.

2.1.5 CULTURAL RESOURCES

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

2.1.5.1 Regulatory Setting

This chapter examines the potential impacts of the Proposed Project on cultural resources. Cultural resources encompass the tangible and intangible remains of our past and may include prehistoric and historic archaeological sites, built environment resources, structures, objects, cultural landscapes, and human remains. Tribal cultural resources (TCRs) are addressed in Section 2.1.18, *Tribal Cultural Resources*.

Cultural resources also include “historical resources,” which are:

1) Resources listed in or determined eligible for listing in the California Register of Historical Resources.

2) Resources included in a local register of historical resources, or ones that have been identified as significant in an historical resource survey.

3) Resources that are deemed by a lead agency to be historically or culturally significant, with regards to California’s past (CEQA Guidelines Section 15064.5 [a]).

In general, to be considered “historically significant,” a resource must meet one or more of the following criteria, enumerated in Public Resources Code Section 5024.1 as follows:

1) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage.

2) Is associated with lives of persons important in California’s past.

3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

4) Has yielded, or may be likely to yield, information important in California prehistory or history.

2.1.5.2 Environmental Setting

The Proposed Project area is 1.25 acres located adjacent to the east bank of the Sacramento River in Hood, California. It can be found on the Courtland 7.5-minute USGS topographic quadrangle, directly in Section 14, Township 6N, Range 4E. The Proposed Project area is in an area with heavy disturbance because of construction and maintenance of the levee, the fish-screen testing facility structures, and historical development and use of the Proposed Project area. Soils in the Proposed Project area consist of partially draining silty/clay loams derived from igneous, metamorphic and sedimentary rock (U.S. Department of Agriculture 2021) and are located by natural levees on floodplains. These soils are considered prime farmland, if irrigated.

According to Meyer and Rosenthal (2008), the majority of radiocarbon-dated sites from the Sacramento Valley are associated with late Holocene surface landforms and contain human occupation sites dating no more than a few thousand years old. Fans and floodplains, such as those in the Proposed Project area, consistently contain buried archaeological deposits and are considered to have moderate-to-high potential for buried archaeological deposits (Meyer and Rosenthal 2008).

Although, no prehistoric archaeological sites or Tribal cultural resources have been identified within the Proposed Project area, areas along waterways, especially rivers, are highly sensitive for cultural deposits because of a long-standing tendency to rely on waterways as sources of water, food, transportation, and trade routes.

High elevation points along these waterways are common locations of prehistoric mounds and middens, which are complex deposits of cultural materials and organic matter, sometimes including human burials and occupation features, that can be found subsurface as deep as 3.5 meters depending on the age, soil deposition pattern, and length of occupation (Rosenthal et al. 2007). This is particularly important to note as

mounds were densely located along major waterways according to early 20th century documentation (one mound every 2 to 3 miles) (Schenck and Dawson 1929). Several mound sites have been documented in the vicinity of the Proposed Project area.

Many of these were disturbed or obscured by agricultural development, levee construction, and erosion (Rosenthal et al. 2007), but this does not mean the cultural material is not still present within these areas or that it no longer holds value to the living descendants of the Tribes that historically occupied the region.

Historical-to-modern aged artificial fills and cuts (including levees, sloughs, canals, and dredge spoils) are not easy to predict for buried deposits as prehistoric material was frequently ignored before federal regulations were established to protect archaeological material. During construction of these features, archaeological sites of any age, including prehistoric mounds, were frequently disturbed via cuts, used as artificial fill for structures such as levees, or were completely buried underneath artificial fill.

There is a moderate-to-high potential for encountering surface and buried deposits from the historic era (post-European contact, but especially since circa. 1850) within the Proposed Project area (Meyer and Rosenthal 2008; Reynolds 2012). Historic maps and aerials for the Proposed Project area depict railroad alignments, buildings, structures, and roads within and near the Proposed Project area.

Prehistoric Context

There is no singular cultural-historical framework of the prehistoric Central Valley. Moratto's 1984 publication, *California Archaeology*, was based on earlier works by Bennyhoff and Fredrickson (1974a and 1974b) who built a framework of the Sacramento Valley's prehistoric cultures. They divided the prehistoric time period into three eras: Paleo-Indian, Archaic, and Emergent (Moratto 1984). Rosenthal (2007) would later use radiocarbon dating with adjusted calibration curves to divide the Archaic period into three distinct categories, the Lower, Middle, and Upper Archaic periods.

Paleo (11,550-8,500 BCE)

The earliest consensus of human occupation in the Central Valley is from 11,550–8,500 BCE. Periodic erosions and deposition of sediments have removed or destroyed a significant amount of archaeological remains from this period. The earliest archaeological evidence was recovered from the Witt Site (KIN-32) located on the historic banks of Tulare Lake in the Southern San Joaquin Valley. Thin, fluted projectile points have been recovered and are believed to be dated to 11,550–9,550 BCE. Human bone found at the Witt Site has been carbon dated to around 11,379 BCE (Rosenthal et al., 2007).

Lower Archaic (8,550-5,550 BCE)

At the beginning of the Lower Archaic period, the landscape of the Central Valley underwent massive change. Alluvial fans and flood plains in the valley experienced massive deposition. The end of the Lower Archaic would again be defined by another period of massive deposition which resulted in the loss of a significant amount of archaeological remains from the period. On the valley floor, the archaeological record is mostly made up of isolated finds. There is one proper site recorded in the Central Valley, KER-116, that was discovered buried near the ancient Buena Vista Lake. Radiocarbon dates of mussels date the site to 7,175–6,450 BCE (Rosenthal et al., 2007). There is no evidence of plant remains or plant processing tools from this period in the Central Valley.

Middle Archaic (5,550–550 BCE)

The Middle Archaic period is marked by a shift in climate. Warmer, drier conditions prevailed in this period. This changed the landscape of California significantly. Tulare Lake dried up and formed the Delta. Such massive changes to the landscape resulted in the burial or destruction of many archaeological sites. Sites older than 2,050 BCE are very rare. The Windmiller Pattern is the earliest pattern described by Moratto (1984) which dates to around 3,050 BCE. Archaeological sites from the later Middle Archaic are much more common. During this time, the Sacramento River corridor began to see stable occupation. Specialized tools, trade objects, and plant and animal remains found on sites along the Sacramento River suggest the population started shifting more toward sedentary villages and communities.

Upper (550–1100 CE)

The transition to the Upper Archaic was marked by a shift toward cooler, wetter seasons, and much more stable conditions. It is from this period onward that cultural differences throughout California became much more pronounced. In the Sacramento Valley, seasonal economies emerged based on bulk harvesting. Acorns became a staple food during this period. Mound villages emerge on the Sacramento River which emerged during the Berkeley period, around 700 BCE, developed into more complex, permanent communities. Rock-lined ovens, house floors, and inset hearths were found in dwellings in these villages (Rosenthal et al., 2007). Raw, unworked obsidian has also been recovered suggesting both a robust trade network and a specialization in craftsmen.

Emergent (1100 CE–Historic Period)

During the Emergent period, the Augustine Pattern would become prevalent in California. The Augustine Pattern is the largest and most diverse material cultural in prehistoric California. Regional traditions which first began to emerge in the Upper Archaic, would fully develop and last into the Contact period. Sacramento River mound villages would experience significant growth into large towns. Haliotis ornaments, bones whistles and sequin beads are found in village mound sites (Bennyhoff and Fredrickson

1974a). Bow and arrow technology was also introduced to the Central Valley during the early Emergent. Gunther barbed points were the first to be introduced. These would later be replaced by the Desert side notch (Rosenthal et al., 2007). The Emergent period saw a massive population boom in California. Large sedentary habitation sites and complex trade networks were fully developed at that point.

Historic Context

Spanish explorers first entered the Sacramento Valley in the 1770s. During this time, the Spanish had established missions and military camps (presidios) along the coast. Spanish interests lay solely with coastal settlements and rarely did they venture out beyond the Delta (Environmental Science Associates 2019).

In 1822, California was ceded to the newly formed First Empire of Mexico. Mexico began to issue land grants in the Central Valley to farmers and ranchers. In 1827, the first fur trappers from the Hudson Bay Company entered California. By 1828, they were trapping beavers in the Sacramento Valley. In the mid-1840s, the beaver population was devastated to the point that the Hudson Bay Company ceased operating in California.

The discovery of gold at Sutter's Mill in Coloma, began a massive population influx of American and European migrants. Over the next few years, Sacramento experienced a massive population growth (Environmental Science Associates 2019). Agriculture took off in the Sacramento Valley and into the Delta.

In 1850, the U.S. federal government passed the Swamp Land Act which transferred ownership of wetlands, swamps, and marshes to State ownership under the condition that the State would sell the land for agricultural or irrigation purposes. This spurred a wave of levee construction along the Sacramento River and Delta. Early levees were earthen and typically made using hand tools. Levee construction companies would frequently use Chinese, Japanese, and Native American laborers (Ingebritsen and Ikehara, n.d.).

The community of Hood was founded in 1860. Its primary function was that of a river landing with a warehouse to store and transport agricultural products to Sacramento. It also included a schoolhouse to service the surrounding farmers. In the early 20th century, Hood would become a stop on the Walnut Grove Railroad. The Walnut Grove Railroad began construction in 1906. It originally ran from old downtown Sacramento to Walnut Grove at its completion in 1912. In 1929, it was extended to Isleton, which extended the total mileage of the line to 33 miles. The railroad transported both passengers and agricultural products. The line ceased operating in 1978 (Thompson 2007).

Methods

Record Search

A record search of the California Historical Resources Information System was conducted in 2019 by the North Central Information Center as IC File # SAC-19-145. The results were returned to DWR on August 22, 2019. The results show one resource, P-34-002143 within the Proposed Project area and three recorded cultural resources within 0.25 mile of the Proposed Project area; P-34-001497, P-34-002135, and P-34-000089.

P-34-002143 is Unit 115 of the Sacramento River Flood Control Project Levee. It is an earthen levee constructed between 1937 and 1953. Unit 115 was recommended eligible inclusion on the National Register of Historic Places.

P-34-001497 is the entire Walnut Grove Railroad of the Southern Pacific Railroad. The Walnut Grove rail alignment passes 0.5 mile east of the site. But siding of the railroad ran from the main line to the warehouse near the river. The site recorded as P-34-001497 is located across River Road, about 60 feet away from the Proposed Project area. It is a contributing component of the Walnut Grove Railroad, which has been determined as eligible for inclusion on the National Register of Historic Places.

P-34-002135 is a set of concrete stairs which run from the crest of the levee to the banks of the Sacramento River. The site is located 300 yards north of the Proposed Project area. The age of the staircase could not be determined at the time of recording.

P-34-000089 is a pre-historic mound site identified in 1934. It was relocated in 1959 by surveyors from the American River Junior College. But subsequent visits in 1995 as part of a Caltrans survey and in 2007 by DWR archaeologists could not identify site. The location identified in the 1959 site recording is located 0.24 mile north of the Proposed Project area.

Literature Review

There have been 11 archaeological reports near the Proposed Project area. Details on each report are recorded on Table 9.

Table 9. Archaeological Reports Near the Proposed Project Area

Report Number	Report Title	In-Project Footprint	Author/Affiliation	Date
S-002945	Cultural Resources Along the Sacramento River from Keswick Dam to Sacramento	No	Jerald Jay Johnson and Patti Johnson/ California State University Sacramento	1974
S-009326	Cultural Resources Inventory of Caltrans District 3 Rural Conventional Highways in Butte, Colusa, El Dorado, Glenn, Nevada, Placer, Sacramento, Sierra, Sutter, Yolo, and Yuba Counties	Yes	Laura Leach-Palm, Bryan Larson, Paul Brandy, Jay King, Lindsay Hartman, and Pat Mikkelsen/ Far Western	2008
S-009795	Late Prehistoric Obsidian Exchange in Central California	No	Thomas Lynn Jackson	1986
S-05208	Sacramento-San Joaquin Delta Investigations: Cultural Resources Reconnaissance	No	Gregory Greenway and William E. Soule	1977
S-010826	Maintenance Area-9 (MA-9) Levee Erosion Repair	No	Marcos L. Guerrero, Rebecca H. Gilbert, and Tiffany A. Schmid/ Deparment of Water Resources	2011
S-010974	Historic Properties Treatment Plan Sacramento River Bank Protection Project; Cultural Resources Remote Sensing Survey and Driver Investigations at Selected Target Locations Sacramento	No	ICF International and Panamerican Consultants, Inc	2012

Report Number	Report Title	In-Project Footprint	Author/Affiliation	Date
	River Bank Protection Project (SRBPP) Sacramento River and Tributaries			
S-012323	Rodent Abatement and Damage Repair Activities Project, Archaeological Sensitivity Assessment	Yes	Robin Hoffman and Paul Zimmer/ ESA	2016
S-012772	California Department of Water Resources Levees, Sacramento Maintenance Yard: Maintenance Area 9: Archaelogical Survey Report	Yes	Ben Curry and Ashleigh Sims/ ESA	2018
S-012394	Historic Properties Treatment Plan Sacramento River Bank Protection Project	No	ICF International and the US Army Corps of Engineers	2012
S-012793	California Department of Water Resources, Sacramento Maintenance Yard Levee Units: Archaeological Survey Report	Yes	Ashleigh Sims and Robin Hoffman/ ESA	2019
S-030204	The Distribution and Antiquity of the California Pecked Curvilinear Nucleated (PCN) Rock Art Tradition.	No	Donna L. Gillete	2003

Survey

The Proposed Project area was surveyed on July 1, 2021, by DWR archaeologist Connor Hendricks. The area was covered with transects of less than 5 meters. Ground visibility was excellent (90–100 percent). The Proposed Project area is mostly covered with compacted aggregate used as a road and parking area with sporadic grasses and soil along the crown of the levee. No cultural material was observed during the survey.

P-34-001497 was visited on September 30, 2021, by DWR archaeologist Connor Hendricks. The site consists of eight rails which have been paved over by SR 160. A small portion of the rail is visible from the asphalt. All other rails and ties from the siding appear to have been removed.

2.1.5.3 Discussion

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

Less than significant impact with mitigation incorporated. There are several known historic-era and built environment sites near the Proposed Project area. The remaining portion of the Walnut Grove Railroad siding is located outside of the Proposed Project area and will not be affected by the Proposed Project activities. Unit 115 of the SRVC will be affected by the Proposed Project. The alignment and the construction of the levee will not be altered.

No archaeological resources have been identified in the Proposed Project area. Consequently, no known archaeological resources that may qualify as historical resources (as defined in CEQA Guidelines Section 15064.5) are present in the Proposed Project area. However, the Sacramento River watershed is a particularly sensitive environment for both prehistoric and historic sites. Prehistoric sites were frequently disturbed and incorporated into construction projects, such as levees. To ensure compliance with Section 15064.5(b)(3), Mitigation Measures CUL-1 through 4 will be implemented.

MM CUL-1:

Should any unexpected cultural resources be exposed during project activities, all work would temporarily stop in the immediate vicinity (e.g., 100 feet) of the find until it can be evaluated by 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, and an appropriate plan of action can be determined in consultation with DWR.

If any suspected TCRs are discovered during ground disturbing construction activities, all work shall cease within 100 feet of the find, or an agreed upon distance based on the Proposed Project area and nature of the find. A Tribal Representative from a California Native American Tribe that is traditionally and culturally affiliated with a geographic area shall be immediately notified and shall determine if the find is a TCR (Public Resources Code Section 21074). The Tribal Representative will make recommendations for further evaluation and treatment as necessary.

MM CUL-2:

An archaeological monitor shall be present when ground disturbance is occurring in areas which have previously been determined to be sensitive for potential archaeological resources. Likewise, a representative of any consulting Tribe shall be present for all activities within areas of concern/interest to that Tribe. The monitors shall have access to the removed material and excavation areas to determine if any cultural or Tribal resources are present (see MM CUL-1).

MM CUL-3:

Should human remains be discovered during project activities, all work will stop immediately in the vicinity (e.g., 100 feet) of the finds until they can be verified. The coroner will be contacted in accordance with Health and Safety Code section 7050.5(b). Protocol and requirements outlined in Health and Safety Code sections 7050.5(b) and 7050.5(c) as well as Public Resources Code section 5097.98 will be followed.

MM CUL-4:

Prior to project construction, a qualified archaeologist in coordination with culturally affiliated California Native American Tribes, shall develop a Cultural Resources Awareness and Sensitivity Training Program for all construction and field workers involved in project ground-disturbing activities. The program shall include a presentation that covers, at a minimum, the types of cultural resources common to the area, regulatory protections for cultural resources, and the protocol for unanticipated discovery of archaeological resources (see Mitigation Measure CUL-1). Personnel working in areas of project ground-disturbing activities shall receive the training prior to working in these areas.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less than significant with mitigation incorporated. The Proposed Project as designed would not cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines section 15064.5. The Proposed Project is not anticipated to impact any archaeological resource pursuant to CEQA Guidelines Section 15064.5.

Although, the Proposed Project is not anticipated to impact any archaeological resources, the Proposed Project would involve ground-disturbing activities that may extend into undisturbed soil. It is possible that such activities could unearth, expose, or disturb subsurface archaeological resources, that have not been identified on the surface. Because previously unrecorded archaeological deposits could be present in the Proposed Project area, and they could be found to qualify as archaeological resources

pursuant to CEQA Guidelines Section 15064.5, impacts of the Proposed Project on archaeological resources could be potentially significant.

Such potentially significant impacts would be reduced to less than significant with mitigation incorporated by implementing Mitigation Measures CUL-1 to CUL-4.

c) Would the Proposed Project disturb any human remains, including those interred outside of formal cemeteries?

Less than significant with mitigation incorporated. No known locations of human remains are located within the Proposed Project area. The Proposed Project would not disturb any human remains with known locations, including those interred outside of formal cemeteries. Incorporation of MM CUL-1 through MM CUL-4 would ensure that any potential impacts to known and previously undiscovered human remains would be reduced to less than significant.

2.1.6 ENERGY

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

2.1.6.1 Environmental Setting

The Proposed Project would consume energy in the form of gasoline and diesel, used during construction for heavy-duty equipment, haul trucks, a crane-mounted barge, flat barge, and construction personnel vehicles (passenger trucks and cars). There is no operational consumption of energy associated with the Proposed Project.

The Sacramento County General Plan Energy Element (general plan) discusses the policies and associated goals to shift energy sources to that of renewable ones, to dampen the trend of increasing energy use per capita, and maintain or enhance living

standards, employment, and environmental quality. Renewable energy is quickly becoming a significant part of Sacramento's energy supply. Major energy-providing companies, such as Sacramento Municipal Utility District and Pacific Gas & Electric, are obligated under State law to provide an increasing percentage of renewable energy. Sacramento's ample supply of cloudless days makes solar a prime candidate to achieve this goal. The general plan identifies policy plans and with them action programs to demonstrate how Sacramento County and other related agencies are to implement these policies (Sacramento County General Plan; Energy Element, 2017). The Proposed Project will not impact the Sacramento County General Plan's renewable energy goals or violate any current policies outlined in the Energy Element, for energy used throughout project construction, operation, and maintenance will not be wasted or used inefficiently.

2.1.6.2 Discussion

a) Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

No impact. The Proposed Project would only consume energy via fuel (gasoline and diesel) from the use of construction equipment, barges and tugboats, and personnel vehicles. No other energy sources will be unnecessarily or inefficiently consumed or wasted during the construction and maintenance of the Proposed Project. The Proposed Project will not result in a facility that needs an operation. Consequently, no impact is anticipated as a result of the Proposed Project.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact. The Proposed Project has had no historical or present purpose to provide renewable energy or energy efficiency by a state or local plan. The proposed plan to construct the Proposed Project will also not obstruct or conflict with State or local plans regarding other renewable energy or energy efficiency. Consequently, no impact is anticipated to State or local plans as a result of the Proposed Project.

2.1.7 GEOLOGY AND SOILS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 California Geological Survey Special Publication 42.)	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on 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?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
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?	☐	☐	☐	☒

f) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	☐	☐	☐	☒

2.1.7.1 Environmental Setting

The Proposed Project area consists of areas on the levee crown and the waterside bank of the Sacramento River levee in Hood, California. The waterside bank is comprised of riprap, trees, and shrubby and ruderal vegetation. The levee crown consists of a graveled road and parking lot. The Proposed Project area is mapped by the United States Department of Agriculture Web Soil Survey as Valpac loam, characterized as very deep, somewhat poorly drained soils formed in alluvium derived of mixed rocks (U.S. Department of Agriculture 2020). Loam is not considered an expansive soil as defined in Table 18-1-B of the Uniform Building Code.

The Proposed Project area lies within the Great Valley geomorphic province, that is crossed by a few faults and bordered to the west by the Coastal Range province with several active faults. An “active” fault is one that shows displacement within the last 11,000 years and is considered more likely to generate a future earthquake than a fault that shows no sign of recent rupture. There are no active faults within the immediate Proposed Project vicinity. The closest potentially active fault to the Proposed Project is the Midland fault, which runs north-south through the Delta approximately 15 miles west of the Proposed Project. The most recent displacement of this fault is estimated by the California Geological Survey (CGS) to be mid- to early-Quaternary (California Geological Survey 2010).

Sacramento County is not affected by ground rupture-hazards, and the city of Hood is not mapped as a liquefaction hazard zone (California Office of Emergency Services 2021). Consequently, the Proposed Project area is not subject to strong seismic ground shaking.

2.1.7.2 Discussion

a) Would the project 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 California Geological Survey Special Publication 42.)

No impact. The Proposed Project is not located within or adjacent to an Alquist-Priolo Earthquake Fault Zone (California Geological Survey 2010). The Proposed Project is not located in an area subject to strong ground motion resulting from earthquakes. The limited nature of the Proposed Project minimizes potential adverse impacts related to ruptures of know earthquake faults. Additionally, the Proposed Project would not result in operational or land use changes that would alter the people or structures exposed to potential rupture of an earthquake fault. Consequently, no impacts resulting in potential substantial adverse effects involving rupture of a known earthquake fault are anticipated as a result of the Proposed Project.

ii) Strong seismic ground shaking?

No impact. The Proposed Project is not located near active faults, and the area is not subject to strong seismic ground shaking. Additionally, the Proposed Project would not result in operational or land use changes that would alter the people or structures exposed to potential rupture of an earthquake fault. Consequently, no impacts are anticipated to cause potential substantial adverse effects involving strong seismic ground shaking as a result of the Proposed Project.

iii) Seismic-related ground failure, including liquefaction?

No impact. The purpose of the Proposed Project is to restore the contour and grade of the levee by removing remnants of an abandoned fish-screen testing facility, thereby minimizing the risk of levee failure and catastrophic flooding. Additionally, the Proposed Project would not result in operational or land use changes that would alter the people or structures exposed to seismic-related ground failure. Consequently, no impacts are anticipated to cause potential substantial adverse effects involving seismic-related ground failure as a result of the Proposed Project.

iv) Landslides?

No impact. The Proposed Project area is a flat levee crest. The waterside levee was designed with slopes not conducive to landslides and is armored with riprap to further reduce the potential for landslides. Additionally, the Proposed Project would not result in operational or land use change that will alter the people or structures exposed to landslides. Consequently, no impacts are anticipated to cause potential substantial adverse effects involving landslides as a result of the Proposed Project.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Less than significant impact. During Proposed Project construction, there is potential for temporary stormwater-related erosion of surface soil from the levee slope. However, this work is temporary in nature and will not significantly alter the stability of the soil. Best management practices (see Section 1.5.2) will be employed during construction to ensure erosion or loss of topsoil does not occur. Once the remnant facility is removed,

the levee will be reconstructed with appropriate earthen material and 95 percent relative compaction will be achieved. The levee crown will be capped with a minimum of three inches of compacted aggregate base, and the waterside of the levee will be armored with geotextile fabric and 2 to 3 feet of armoring rock (riprap). Consequently, the Proposed Project is not likely to result in substantial soil erosion or the loss of topsoil. Consequently, less than significant impacts to substantial erosion or topsoil loss are anticipated as a result of the Proposed Project.

c) Would the project 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?

No impact. The existing nature of the Proposed Project area is unstable, in that the abandoned fish-screen testing facility installed within the levee is threatening the integrity of the levee. The Proposed Project includes removal of the facility's remnants, compaction with appropriate soils, and re-armoring with aggregate base and riprap. The Proposed Project will improve the stability of the levee, thereby reducing the potential for landslides, lateral spreading, subsidence, liquefaction, or collapse. Consequently, the Proposed Project will have a beneficial effect, and no impacts to geologic units or soil instability are anticipated as a result of the Proposed Project.

d) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial direct or indirect risks to life or property?

No impact. The Proposed Project is not located on expansive soils. Additionally, no buildings or structures would be constructed as part of the Proposed Project. Removing the existing structures from within the levee and rebuilding this portion of the levee to the standards of the CVFPB would restore the contour and grade of the levee and reduce direct or indirect risks to life or property. Consequently, no impact resulting in risks to life or property because of expansive soils are anticipated as a result of the Proposed Project.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No impact. The Proposed Project will not include installation of septic tanks or alternative wastewater disposal systems. The Proposed Project includes the removal of an abandoned septic tank and leach field and restoring the contour and grade of the levee crown to the standards of the CVFPB. As such, there would be no future use of the septic tank and leach field that would need to be supported by suitable soils or require sewers for the disposal of wastewater. Consequently, no impacts to septic tanks or

wastewater disposal systems because of incapable soils are anticipated as a result of the Proposed Project.

d) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No impact. The Proposed Project would not destroy a unique paleontological resource or site or unique geological feature. Consequently, no impacts are anticipated to destroy unique paleontological resource, site or geologic feature as a result of the Proposed Project.

2.1.8 GREENHOUSE GAS EMISSIONS

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

2.1.8.1 Environmental Setting

To mitigate future climate impacts, DWR developed a Climate Action Plan to guide DWR on how it will address climate change for its programs, projects, and activities (California Department of Water Resources 2020c). The Climate Action Plan is divided into three phases: Greenhouse Gas Emissions Reduction Plan; Climate Change Analysis and Adaptation Scenario Selection and Guidance; and the Climate Change Vulnerability Assessment and Adaptation Plan.

Phase I: Greenhouse Gas Emissions Reduction Plan

In May 2012, DWR adopted the DWR Climate Action Plan-Phase I: Greenhouse Gas Emissions Reduction Plan (2012 Plan), which details DWR's efforts to reduce its greenhouse gas (GHG) emissions consistent with Executive Order S-3-05 and the Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32). DWR also adopted the Initial Study/Negative Declaration prepared for the 2012 Plan in accordance with the

CEQA Guidelines review and public process. The 2012 Plan 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) (California Department of Water Resources 2012). The DWR Greenhouse Gas Emission Reduction Plan specifies aggressive 2020 and 2050 emission reduction goals and identifies a list of GHG emissions reduction measures to achieve these goals.

As it committed to in the 2012 Plan, DWR developed a Greenhouse Gas Emissions Reduction Plan Update 2020 (Update 2020) to review its GHG reductions since the 2012 Plan and to update strategies for further reduction consistent with legislative changes. For Update 2020, DWR prepared an addendum to the negative declaration pursuant to CEQA Guidelines Sections 15162(b) and 15164(b) which evaluated the changes to the 2012 Plan and changes in surrounding circumstances (including legislative, regulatory, and market changes). Update 2020 concluded that these changes would not cause any new significant environmental impacts that would require the preparation of a subsequent negative declaration or an environmental impact report.

DWR specifically prepared its 2012 Plan and Update 2020 as a “Plan for the Reduction of Greenhouse Gas Emissions” to meet the requirements 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 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, subd. [h][3]). More specifically, “later 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.” (CEQA Guidelines Section 15183.5, subd. (b)(2).)

Section 10 of the Update 2020 outlines the steps that each DWR project will take to demonstrate consistency with Update 2020. These steps include:

1. Identify, quantify, and analyze the GHG emissions from the proposed project and alternatives using a method consistent with that described in DWR internal guidance, “Guidance for Quantifying Greenhouse Gas Emissions and Determining the Significance of their Contribution to Global Climate Change for CEQA Purposes,” as such guidance document may be revised.
2. Determine that construction emissions levels do not exceed the extraordinary construction project threshold of either 25,000 metric tons of carbon dioxide equivalent (mtCO2e) for the entire construction phase of the project or 12,500 mtCO2e in any single year of construction.

3. Incorporate into the design or implementation plan for the project all project-level GHG emissions reduction measures listed in Chapter VI or explain why measures that have not been incorporated do not apply to the project.
4. Determine that the project does not conflict with DWR's ability to implement any of the specific project GHG emissions reduction measures listed in Chapter VI.
5. If implementation of the proposed project would result in additional energy demands on the State Water Project system of 15 GWh/year or greater, the proposed project must obtain a written confirmation from the DWR State Water Project Power and Risk Office stating that the Renewable Power Procurement Plan will be updated to accommodate the additional load resulting from the proposed project at such time as the proposed project is ultimately implemented.

Consistent with these requirements, a greenhouse gas emission reduction plan Consistency Determination Checklist is attached as Appendix B documenting that the Proposed Project has met each of the required elements.

Phase II: Climate Change Analysis Guidance

In 2018, DWR finalized the Climate Change Analysis Guidance which provides a framework and process for the consistent incorporation and alignment of climate change impact analyses for DWR's project and program activities (California Department of Water Resources 2018). This guidance was created to ensure DWR is consistent with AB 1482, AB 2800, and Executive Order B-30-15 which requires climate change impacts, adaptation, and opportunities for mitigation to be considered for all DWR activities. The guidance is a two-step process that DWR managers should follow to determine the appropriate level of climate analysis for their activity or project:

- Step 1: Completion and submittal of the DWR Climate Change Screening Analysis Form and Climate Change Vulnerability Checklist for DWR Activities form to screen a project's exposure and sensitivity to climate changes.
- If a project has a relatively low climate risk, then the manager does not need to proceed to Step 2. If the project has some level of climate change risk, then Step 2: Determine the most appropriate method and tool to use in evaluating the project's vulnerability to climate change.

Consistent with these requirements, a DWR Climate Change Screening Analysis Form and Climate Change Vulnerability Checklist for DWR Activities form is attached in Appendix D documenting the Proposed Project's level of risk to climate changes. The results of the screening show the Proposed Project does not require additional analysis of climate change impacts.

Phase III: Climate Change Vulnerability Assessment and Adaptation Plan

DWR finalized the Climate Change Vulnerability Assessment in 2019 which evaluates, describes, and quantifies the vulnerabilities of DWR facilities and activities performed to

projected climate changes (including changes in temperature, wildfire, sea-level rise, hydrology, and ecosystems) (California Department of Water Resources 2019). The Climate Change Vulnerability Assessment was written to align with the goals set in Executive Order B-30-15 and AB 1482 and focuses on mid-century impacts from climate change. DWR utilized the Climate Change Vulnerability Assessment to finalize the first iteration of the Climate Change Adaptation Plan in 2020 which prioritizes DWR's climate resiliency efforts (California Department of Water Resources 2020b). The Climate Change Adaptation Plan describes DWR's actions to reduce the vulnerabilities from the Climate Change Vulnerability Assessment, other DWR efforts to implement local and regional climate adaptation, and additional efforts DWR will need to take to meet future climate change challenges.

2.1.8.2 Discussion

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than significant impact. GHG emissions for the Proposed Project have been calculated to be 244.09722 mtCO2e found in Appendix D. Based on the analysis provided in the 2012 Plan and Update 2020 and the demonstration that the Proposed Project is consistent with Update 2020 (Appendix D), DWR as the lead agency has determined that the Proposed Project's incremental contribution to the cumulative impact of increasing atmospheric levels of GHGs is less than cumulatively considerable; as a result, impacts resulting from Proposed Project activities would be less than significant.

b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than significant impact. CEQA Guidelines require environmental analyses to evaluate both the level of GHG emissions associated with the construction and operation of a proposed project and the proposed project consistency with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

DWR developed the 2012 Plan to guide its efforts in reducing GHG emissions (DWR 2012). The GHG emissions reduction measures proposed in the 2012 Plan were developed to reduce emissions of GHGs in California as directed by Executive Order (EO) S-3-05 and AB 32. DWR established the following GHG Emissions Reduction Goals:

- Reduce GHG emissions from DWR activities by 50 percent below 1990 levels by 2020.

- Reduce GHG emissions from DWR activities by 80 percent below 1990 levels by 2050.

In 2015, DWR achieved reduced GHG emissions by 50 percent below 1990 levels which was 5 years earlier than the 2012 Plan (California Department of Water Resources 2020a).

In Update 2020, DWR updated DWR's GHG reductions from the 2012 Plan to further reduce GHG emissions consistent with the State's GHG emissions reduction targets (California Department of Water Resources 2020a). DWR added the following additional GHG Emissions Reduction Goals in Update 2020:

- Mid-term Goal: By 2030, reduce GHG emissions to at least 60 percent below the 1990 level.
- Long-term Goal: By 2045, supply 100 percent of electricity load with zero-carbon resources and achieve carbon neutrality.

BMPs have been incorporated, see Section 1.5.2., for Construction and Maintenance from the Update 2020 are designed to ensure that individual projects are evaluated, and their unique characteristics are taken into consideration when determining if specific equipment, procedures, or material requirements are feasible and efficacious for reducing GHG emissions from the Proposed Project. Some of the BMPs listed in Update 2020 (DWR BMPs 4, 5, and 13) were not included in this document since they were not applicable to the Proposed Project or were determined to not be feasible (DWR BMP 6). All variances from Update 2020 were approved by the DWR CEQA Climate Change Committee (Appendix D).

The Proposed Project would not conflict with the AB 32 Scoping Plan, the SMAQMD CEQA guidelines, DWR Climate Action Plan, or any other plans, policies, or regulations for the purpose of reducing GHG emissions. Based on the analysis provided in the 2012 Plan and Update 2020, and the demonstration that the Proposed Project is consistent with Update 2020 (as shown 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 is less than cumulatively considerable and, as a result, the impacts would be less than significant.

The Proposed Project will have a less than significant impact since it conflicts with some of the BMPs of Update 2020. All applicable Project-Level GHG Emissions Reduction Measures have been incorporated into the design or implementation plan for the Proposed Project and measures not incorporated have been listed and determined not to apply to the Proposed Project (Appendix D).

2.1.9 HAZARDS AND HAZARDOUS MATERIALS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires	☐	☐	☒	☐

2.1.9.1 Environmental Setting

The Proposed Project site encompasses a total of 1.25 acres located at the southern edge of Sacramento County in the community of Hood, California. The topography consists of low, flat land with low elevation. Adjacent to the Proposed Project area is the Sacramento River and SR 160. The area has constant human activity and the gravel lot is used as a parking lot for DWR personnel as well as parking for the industrial warehouse facility that is located adjacent to the Proposed Project area. The Proposed Project includes excavation and removal of the remnant fish-screen testing facility. The Proposed Project activities would involve limited transport, storage, use, or disposal of hazardous materials. Some examples of hazardous materials handling include fueling and servicing construction equipment on-site, and the transport of fuels, lubricating fluids, and solvents. In addition, remnants of the fish-screen testing facility include an abandoned leach field and septic tank that is presumed hazardous. The closest hazardous waste landfill, the closest facility located in Kettleman Hills Landfill, 202 miles away from the Proposed Project, a 404-mile round trip.

Both the California State Water Resources Control Board GeoTracker and California Department of Toxic Substances Control (DTSC) EnviroStor databases were consulted on August 24, 2021, to determine if there were any recorded hazardous materials sites of concern within an approximate one-mile radius of the Proposed Project area. One site within the search radius was identified approximately 0.3 mile east from the Proposed Project area. This occurrence was first reported in 1998 as a diesel fuel leak from an underground storage tank (UST). Remediation required removal of the significantly impacted soil adjacent of the UST by excavation, along with the installation of a single groundwater monitor well ten feet, down gradient, from the former tank location. In February 1999, the County of Sacramento, Environmental Management Department, confirmed that the site investigation and remedial action for this case had been completed. As a result, this case has been closed.

2.1.9.2 Discussion

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than significant impact. Construction of the Proposed Project would not require extensive or on-going use of acutely hazardous materials or substances. Proposed Project activities would involve limited transport, storage, use, or disposal of hazardous materials. Some examples of hazardous materials handling include fueling and servicing construction equipment on-site, and the transport of fuels, lubricating fluids, and solvents.

Operation of the Proposed Project would be consistent with existing practices used by DWR. All hazardous materials would be stored and used in accordance with applicable

federal, State, and local regulations. There is always the potential for the release of hazardous substances during construction activities; however, by implementing avoidance and minimization measures outlined in Section 1.5.3, the potential for accidental releases would be minimized. Consequently, impacts to the public to the environment through routine transport, use or disposal of hazardous materials are anticipated to be less than significant as a result of the Proposed Project.

b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?

Less than significant impact. The Proposed Project includes excavation, removal, and disposal of a septic tank and leach field located within the levee crown. Septic tanks can potentially pose health hazards, including exposure to contaminated soil or methane gases due to leaking of contaminants if not properly disposed of.

The septic system and leach field shall be carefully excavated and demolished, and all concrete, metal, waste, and soils would be properly disposed of offsite. The leach field measures 50 by 25 feet (1,250 square feet) and soils/materials excavated are assumed to be potentially hazardous. The area will be contained, and materials will be properly disposed of at a hazardous waste landfill, the closest facility located in Kettleman Hills Landfill, 202 miles away from the Proposed Project, a 404-mile round trip. Proper compaction of backfill shall be in place to prevent settling and avoid potential sink hole once the system has been removed. Additionally, high-density polyethylene (HDPE) pipe associated with the septic system will be removed. There are three State- and county-approved recycle and disposal facilities within 30 miles of the Proposed Project site that could be used for disposal.

Other materials used in the Proposed Project are not acutely hazardous and are similar to materials already used by DWR for maintenance of facilities and structures. Implementation of the Proposed Project would not increase the risk of the release of hazardous materials into the environment. Although, there is always the potential for the release of hazardous substances during construction activities, by implementing avoidance and minimization measures outlined in Section 1.5.3, the potential for accidental releases would be minimized. Impacts to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment are anticipated to be less than significant as a result of the Proposed Project.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No impact. The Proposed Project is not located within 0.25 mile of any existing or proposed school. Consequently, no impacts to an existing nearby school from hazardous emissions or materials is anticipated as a result of the Proposed Project.

d) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No impact. Pursuant to Government Code Section 65962.5, the State Water Resources Control Board (SWRCB) GeoTracker and the DTSC EnviroStor online databases were consulted on August 24, 2021, to determine if there are any recorded hazardous material sites within or near the Proposed Project area.

One hazardous material site within that search radius was identified approximately 0.3 mile east from the Proposed Project area. This occurrence was first reported in 1998 as a diesel fuel leak from a UST. Remediation required removal of the significantly impacted soil adjacent to the UST by excavation, along with the installation of a single groundwater monitoring well ten feet, down gradient, from the former tank location. In February 1999, the County of Sacramento, Environmental Management Department, confirmed that the site investigation and remedial action for this case had been completed. As a result, this case has been closed.

The Proposed Project area is not in an area that would be listed as a hazardous materials cleanup site, pursuant to Government Code Section 65962.5(a)(4). Consequently, no impact to the public or environment from this potentially pre-existing hazardous material site is anticipated as a result of the Proposed Project

e) Would the project, for a project located within an airport land use plan or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area?

No impact. The Proposed Project is not located within an airport land-use plan, within 2 miles of a public-use airport, or in the vicinity of a private airstrip. The nearest public airport or public-use airport is the Franklin Field Airport, which is approximately 10 miles southeast of the project site. Consequently, no impacts to an airport-related safety hazard are anticipated as a result of the Proposed Project.

f) Would the project impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?

No impact. According to the Sacramento County General Plan, the Proposed Project is not located within any major thoroughfares that may be used as an evacuation route or muster location, nor does it contain any essential facilities for emergency response. Consequently, no impacts to current implemented emergency response plans or evacuation plans are anticipated as a result of the Proposed Project.

g) Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Less than significant impact. The Proposed Project is not in an area designated by California Fire Department as a very high fire hazard severity zone (CAL FIRE 2020). Dry vegetation at the site poses a potential fire hazard if it were to be inadvertently ignited; however, BMPs outlined in Section 1.5.2 will be implemented to reduce the risk of fire that could be started as a result of construction activity and vehicle traffic associated with the Proposed Project. Consequently, the risk of exposing people or structures to significant risk of loss, injury, or death from fire is anticipated to be less than significant as a result of the Proposed Project.

2.1.10 HYDROLOGY AND WATER QUALITY

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

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

2.1.10.1 Environmental Setting

The Proposed Project site is located at the southern edge of Sacramento County in the community of Hood, California. The site encompasses an approximate 1.25-acre area, including parcels adjacent to SR 160, along the levee and bank of the east side of the Sacramento River, and within the Sacramento River. The Proposed Project site lies within the primary zone of the legal Sacramento-San Joaquin Delta (Delta).

The Sacramento River is the largest river in California. It originates near Mount Shasta and flows down into the Delta. The Sacramento River is constrained by levees that support water conveyance and keep water from intruding into agricultural fields, orchards, and rural towns. Delta levees typically have waterside slopes that are stabilized with riprap and are actively maintained to protect the levees' integrity. Few riparian trees and habitat are scattered within the riprap and protected levee slopes.

The Proposed Project site consists of the waterside bank located on the east side of the Sacramento River, the levee crown, and partially within the Sacramento River. The waterside bank of levee extends from the hinge point of the levee crown and extends below the ordinary high-water mark of the Sacramento River. The levee bank is comprised of riprap, trees and shrubby vegetation, and ruderal vegetation. The Sacramento River portion of the Proposed Project area is considered to begin below the OHWM and extend to the riverbed. The riverbed is presumed to consist of riprap and soft sandy, silty sediments.

The Proposed Project work entails excavation and disposal of the fish-screen testing facility, which includes in-water catwalk structure, pipe/conduit, and pile removal in addition to similar work in the levee slope. The abandoned facility remnants will be removed from the bank and water, and the bank will be recontoured and armored with geotextile fabric and riprap. Work may be conducted via a pair of flatbed and crane barges that are staged in the Sacramento River.

2.1.10.2 Discussion

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less than significant impact. The Proposed Project involves ground disturbance along the levee slope and below the OHWM, which has the potential to violate water quality standards and/or waste discharge requirements. Waterside work involving ground disturbance includes clearing and grubbing and levee crown excavation, the catwalk structure and railing including the 10 piles supporting this structure, pipe/conduit as well as the removal of fish-screen testing facility-related on-land infrastructures such as the septic system, leach field, pipe/conduit, concrete return basin, and any buried anomalies (utility lines, approach flume, foundations, and miscellaneous steel). Barge work may be conducted via a pair of flatbed and crane barges staged in the Sacramento River.

Implementation of BMP 2 (Section 1.5.2), and AMMs HAZ-1 and -2 (Section 1.5.3) which includes erosion control to further ensure that Proposed Project activities do not result in erosion or violate any water quality standards, waste discharge requirements, or substantially degrade surface or groundwater quality. Consequently, water quality or waste discharge impacts would be less than significant from Proposed Project activities.

b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

No impact. The Proposed Project is located along the levee crown, waterside bank, and in the Sacramento River riverbed. While the Proposed Project includes the excavation of streambed material with the piles, catwalk structure, and pipe/conduit, the waterside work is not expected to be deep enough to reach the groundwater table. In-water pile removal work will be extracted via a vibratory hammer. The nine-inch, on average, diameter piles have an assumed 45-foot average pile depth below the water's surface; if piles are unremovable, the pile will be cut off at least one foot below the surface. On land, work will require excavation to a depth of no more than 10 feet. The removal of the fish-screen testing facility equipment should not decrease groundwater supplies or recharge and should not impede sustainable groundwater management of the basin as no water would be pumped from any on- or off-site groundwater sources. All ground disturbance will be backfilled and graded to design specifications. Consequently, no impacts are anticipated on groundwater supplies, recharge, or sustainable groundwater management from Proposed Project activities.

c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) result in substantial erosion or siltation on- or off-site?

Less than significant impact. The Proposed Project includes ground disturbance activities that have the potential to result in erosion or siltation; however, implementation of BMP 2 (Section 1.5.2) and AMMs HAZ-1 and -2 (Section 1.5.3) will increase erosion control, and the use of a Spill Prevention and Response plan will control erosion or siltation events during Proposed Project activities. Disturbed areas along the waterside of levee bank will be recontoured and minimally armored with geotextile fabric and 2 to 3 feet of riprap (or armoring rock). Levee crown activities include excavation and removal of the remaining fish screening testing facilities, placement of earthfill, compaction, and capping with aggregate base. All temporarily disturbed areas will be returned to pre-project contours and conditions and stabilized to reduce the potential for erosion of upland areas. Consequently, any substantial erosion or siltation impacts are anticipated to be less than significant as a result of the Proposed Project activities.

ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?

Less than significant impact. The Proposed Project area will be returned to pre-project contours and conditions and stabilized to reduce the potential for erosion of upland areas. Areas along/near the water and waterside levee slope will be recontoured, armoring the levee slope with geotextile fabric and 2 to 3 feet of riprap. Consequently, any potential increase to surface runoff resulting in flooding is anticipated be less than significant as a result of Proposed Project activities.

iii) create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

Less than significant impact. The Proposed Project would not create or contribute runoff water that would exceed existing or planned stormwater drainage or provide substantial additional sources of polluted runoff. Areas along the waterside of the levee slope will be stabilized with geotextile fabric and 2 to 3 feet of riprap. Upland areas will be returned to pre-project contours and conditions and stabilized to reduce the potential for erosion. Removal of the abandoned fish screen testing facilities would benefit stormwater discharge by reducing the potential for contaminated materials associated with the removed piles, catwalk, septic system, leach field, pipe/conduit, concrete return basin, and buried anomalies from entering the river or stormwater drainage systems. Consequently, stormwater and/or polluted runoff impacts are anticipated be less than significant as a result of the Proposed Project activities.

iv) impede or redirect flood flows?

Less than significant impact. Flood flows should not be impeded or redirected to different areas. Proposed Project areas will be compacted, returned to their original contours and conditions, and stabilized and/or armored. The removed piles and catwalk footprints will be replaced with riprap and/or will be stabilized. Consequently, impacts are anticipated to be less than significant as a result of the Proposed Project activities.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants resulting from project inundation?

Less than significant impact. The Proposed Project is not located within a tsunami or seiche zone and would not affect the existing risk of flood hazard, seiche, or tsunami resulting from the release of pollutants. The Proposed Project entails the removal of abandoned infrastructure and would restore the levee back to its original elevation, contours, and grades prior to the installation of the fish-screen testing facility and compacted in compliance with the California Water Code, Division 5, Part 4, Title 23 of the California Code of Regulations to protect the public and property from catastrophic flooding. Furthermore, the Proposed Project activities are temporary in nature and minor in scope. Potentially hazardous material associated with the facility only exists within the levee crown near the leach field and septic tank facilities, and these remnant structures will be removed from below ground and taken off site immediately. Implementation of BMP 2 (Section 1.5.2), and AMMs HAZ-1 and HAZ-2 (Section 1.5.3) will ensure DWR meets all applicable laws, regulations, and ordinances. If future floods were to occur, the risk of pollutant release would be less once the Proposed Project is completed. Consequently, impacts are anticipated to be less than significant as a result of the Proposed Project activities.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No impact. The Proposed Project would not conflict with or obstruct the implementation of a water quality control plan, including the Bay-Delta Water Quality Control Plan (State Water Resources Control Board 2018), because of the limited scope and duration of the work. In addition, to the incorporation of a BMP 2 (Section 1.5.2), and AMMs HAZ-1 and HAZ-2 (Section 1.5.3), DWR will obtain and comply with a Clean Water Act Section 401 Water Quality Certification from the Central Valley Regional Water Quality Control Board to ensure compliance with all applicable water quality standards, limitations, and restrictions. The Proposed Project does not include activities that would require the use of groundwater, nor would it impact groundwater, and therefore would not conflict with a sustainable groundwater management plan. Consequently, the Proposed Project is anticipated to not impact, conflict with, or obstruct the implementation of a water quality control plan or sustainable groundwater management plan.

2.1.11 LAND USE AND PLANNING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☐	☒

2.1.11.1 Environmental Setting

The Proposed Project is located in Hood, California, within Sacramento County and is made up of five parcels with varying zone and land use designations set by the Sacramento County General Plan, as described in Section 2.1.1.1, Figure 6.

Permitted uses for Light Industrial include operations that do not create smoke, gas, odor, dust, sound, or other objectionable influences that would affect surrounding uses. The permitted uses for Agricultural 80 are to promote long-term agricultural use for agricultural land that has a minimum lot size of 80-acres and discourage premature conversion of agricultural land to urban uses.

The Sacramento County General Plan 2030 and Land Use Diagram Map and has designated the Proposed Project area as intensive industrial and agricultural cropland (Sacramento County 2020).

2.1.11.2 Discussion

a) Would the project physically divide an established community?

No impact. The Proposed Project area is located on State-owned property. The Proposed Project would not alter the existing use of the site and would not divide an established community. Consequently, no impacts to established communities are anticipated as a result of the Proposed Project.

b) Would the project cause a significant environmental impact resulting from a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No impact. The Proposed Project area is owned and maintained by the DWR. Implementation of the Proposed Project would not alter or change the existing land use and thus would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. The Proposed Project will not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect; consequently, the Proposed Project will have no impact.

2.1.12 MINERAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

2.1.12.1 Environmental Setting

The California Department of Conservation, California Geological Survey (CGS), conducts Mineral Land Classification surveys that designate land areas, such as mineral resources zones or aggregate resources zones. The CGS has mapped aggregate availability throughout the state, and no aggregate resources zones have been identified on or within the vicinity of the proposed project. The Sacramento County General Plan also outlines mineral resource goals and policies to protect these areas. The map provided in the county's general plan shows that the Proposed Project area is not located in or around an area of known significant mineral resource (Sacramento County 2017).

2.1.12.2 Discussion

a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No impact. No known mineral resource recovery sites or aggregate resource zones are located on the Proposed Project site. Additionally, the Proposed Project area has not been designated by the CGS as an area of known mineral resources. Consequently, no impact to mineral resources of region or state value is anticipated as a result of the Proposed Project.

b) Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No impact. There are no mineral recovery sites within or near the Proposed Project area identified in the Sacramento County General Plan. The Proposed Project would not result in impacts related to 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. Consequently, no impacts to a locally important mineral resource recovery site are anticipated as a result of the Proposed Project.

2.1.13 NOISE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 in other applicable local, state, or federal standards?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

2.1.13.1 Environmental Setting

Existing noise sources in the Proposed Project area include vehicle traffic, agricultural operations, and commercial noise sources. The Proposed Project area is located on DWR property in Hood, California, on the east side of the Sacramento River levee, with multiple commercial buildings in the immediate vicinity. State Route 160 is adjacent to the Proposed Project area with residential land use to the east and agricultural land use north and south of the Proposed Project area. Transportation noise sources include the following:

- Traffic along the corridors of Interstate 5 and State Route 160.
- Local passenger traffic.
- Motorized boats along the Sacramento River.

Acceptable noise levels for agricultural, commercial, industrial, and residential land ranges from 50 to 75 dB common noise equivalent level (CNEL).

2.1.13.2 Discussion

a) Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, State, or federal standards?

Less than significant impact. Construction noise levels would fluctuate depending on the particular type, number, and duration of usage of the varying equipment. The level of noise largely depends on the type of construction activities occurring on any given day. Construction equipment used during the Proposed Project would include a low-boy tractor trailer, skid-steer loader, front end loader, crawler crane, vibratory pile extractor equipment, compaction roller, compactor, flat and crane barges, tugboat excavator, saw/crane, bucket truck, hauling trucks, utility trucks, passenger vehicles, and water trucks. The equipment proposed for use during Proposed Project activities range from 74 to 95 dB CNEL approximately 50 feet from the source of activity (Federal Transit Administration 2018), a range that is normally considered unacceptable as defined by the Sacramento County General Plan. But, per Sacramento County Code section 6.68.090(h), all noise sources associated with construction, repair, remodeling, demolition, paving, or grading of any property are exempt from maximum noise level requirements so long as said activities do not take place between the hours of 8 p.m. and 6 a.m. on weekdays. Construction will only be taking place during non-sensitive, daylight hours as defined by the Sacramento County General Plan, for a duration of no more than a few months. In addition, to the Proposed Project's temporary nature it would also not result in any operational facility or need of continued maintenance activities that would create a permanent increase in noise levels.

Proposed Project impacts are anticipated to be less than significant because of the generation of ambient noise levels in the vicinity of the Proposed Project being temporary and not exceeding local, State, or federal noise ordinance thresholds.

b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Less than significant impact. Construction activities in the Proposed Project area may result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. Groundborne noise impacts occur because of the vibration of structures; however, these impacts would be temporary. In addition, construction methods are standard practices, and are not known to generate excessive vibrations or excessive noise levels. There are two commercial structures adjacent to the Proposed Project site; however, these structures are more than 75 feet away from the construction activities, resulting in minimal risk of structural damage as a result of groundborne vibrations.

On the waterside of the Proposed Project, a vibratory hammer will be used to remove the support piles. This piece of equipment is known to be lighter, quieter, and will create a smaller footprint than an impact hammer. Vibratory hammer use will be temporarily required and will not result in excessive groundborne vibration or noise levels. Consequently, impacts related to excessive groundborne vibration or noise levels are anticipated to be less than significant as a result of the Proposed Project.

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 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The Proposed Project is not within the vicinity of a public airport or within an airport land-use plan. The closest airport to the Proposed Project is the Franklin Field Airport, located approximately 5 miles east of the Proposed Project site. Consequently, no impacts to people, businesses, or private or publicly owned airports from excessive noise levels within 2 miles of the Proposed Project area are anticipated as a result of the Proposed Project.

2.1.14 POPULATION AND HOUSING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

2.1.14.1 Environmental Setting

The Proposed Project area includes the levee crown, the waterside bank of the eastern side of Sacramento River, and an area within the Sacramento River. The levee crown

consists of a graveled levee road and parking lot. This area has consistent vehicle traffic because of an industrial warehouse facility that is located adjacent to the Proposed Project area. The waterside bank of the levee extends from the hinge point of the levee crown and extends to the OHWM of the Sacramento River. The levee bank is comprised of riprap, trees and shrubby vegetation, and ruderal vegetation. The Sacramento River portion of the project area is considered to begin at the OHWM and the riverbed, which is presumed to consist of riprap and soft, sandy, silty sediments. The Proposed Project would result in excavation and disposal of the remaining existing fish-screen testing facility within the levee and would restore the levee to its original contour and grade prior to installation of the fish-screen testing facility, thus the Proposed Project does not propose the construction of new homes or businesses and would not extend roadways or infrastructure. Adjacent land is owned by the State of California, DWR, and the CVFPB is the regulatory agency responsible for ensuring that the State-federal levees and other facilities of the State Plan of Flood Control are operated and maintained in a manner that reduces the risk of catastrophic flooding for the people and the property in California's Central Valley.

2.1.14.2 Discussion

a) Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No impact. The Proposed Project does not include the construction of residential housing or commercial development and does not propose extensions of roads or infrastructure. Consequently, no impacts are anticipated to induce substantial growth in the area as a result of the Proposed Project.

b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No impact. The Proposed Project is in an area zoned as light industrial, Delta Waterways, and Agricultural 80, see Section 2.1.1.1, which includes the levee crown, the waterside bank of the Sacramento River, and an area within the OHWM of the Sacramento River. Consequently, no impacts are anticipated related to displacement of an existing population as a result of the Proposed Project.

2.1.15 PUBLIC SERVICES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

2.1.15.1 Environmental Setting

The Sacramento County General Plan discusses the goals Sacramento County (the County) has regarding Public Facilities such as police, fire, schools, and parks (Sacramento County 2019).

Police

The general plan, Public Facilities Element Section VI, discusses the current sheriff and police enforcement services for Sacramento County. This specialized service includes but is not limited to security services, training, response to calls, surveillance, and routine patrolling. The general plan discussed the County's current police protection demands and the plans in place for achieving those demands and goals. The biggest goal is to provide adequate sheriff services and facilities for the unincorporated areas of the

County. The expansion of law enforcement services will be achieved by reducing and controlling crime, developing more law enforcement facilities to keep up with the needs, growth, and distribution of the County, and implementing the use of education and crime prevention in the practice of law enforcement.

Fire Protection

Fire service is provided in the County of Sacramento to the cities of Folsom, Galt, Isleton, and Sacramento; the Elk Grove Community Service District, and seven other independent fire districts. All fire districts provide a multitude of services, including but not limited to medical rescue, fire protection, and paramedic squads. The general plan discusses the county's current fire protection demands and the plans in place for achieving those demands and goals. The goal is to provide efficient and effective fire protection and emergency response to existing and new development. These goals and demands will be met by increasing the development of new fire hydrants, access arrangements, adequate off-site improvements to meet fire flow requirements, traffic signal replacement and installation of emergency signal activation systems, traffic calming measures, enhanced building and neighborhood design, and expansion of fire protection facilities.

School Districts

The county also plans to build new public schools to maintain the quality of learning and support the increasing number of residents. These schools will function as both educational institutions and community centers and should be planned accordingly. Land dedications or reservations for schools should meet State guidelines for school parcel size. Specific plans shall show the location of future school sites based upon adopted school district master plans and criteria in the general plan.

Parks

The general plan defines the county parks and recreation facilities as essential services for creating and maintaining healthy and vibrant communities. These recreational facilities provide value to the county's residents by being accessible and well-funded for both organized and informal activities and services. The general plan discusses the county's goal to provide a total of 20-acres of regional parks and local parks per 1,000 residents from various sources.

Other public facilities

The general plan also discusses public water collection and treatment facilities, solid waste services and facilities, library facilities and services, and energy facilities. All of which are intended for the public services in multi-faceted ways.

The county's goal for library facilities is to be well-designed and well-maintained by incorporating the use of current and advanced technology.

The county's water and solid waste facilities are in the pursuit of becoming safer and more environmentally sound, economically efficient, and financially equitable. The energy facilities are intended to be appropriately sited, efficient, and safe in operation. They will also produce and distribute energy to the county residents while increasing or maintaining environmental quality and human health.

2.1.15.2 Discussion

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the 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:

Police?

No impact. The Proposed Project would not create any new demand for police and would not adversely affect response times or alter any public services facilities or goals currently being addressed or achieved by Sacramento County. Consequently, no impacts are anticipated to police services as a result of this Proposed Project.

Fire Protection?

No impact. The Proposed Project would not create any new demand for fire protection and would not adversely affect response times or alter any public services facilities or goals currently being addressed or achieved by Sacramento County. Consequently, no impacts are anticipated to fire protection services as a result of this Proposed Project.

Schools?

No impact. The Proposed Project would not create any new demand for additional school construction, nor would it affect the operations of existing schools. Consequently, no impacts are anticipated to schools as a result of this Proposed Project.

Parks?

No impact. The Proposed Project would not create or alter the demand for recreational services. The Proposed Project would not interfere with public usage of existing recreational facilities, such as parks. Consequently, no impacts are anticipated to recreational services as a result of this Proposed Project.

Other public facilities?

No impact. The Proposed Project would not create any new demand for public services or alterations to existing public facilities. The Proposed Project would not require the construction of new facilities or structures. Consequently, no impacts are anticipated to public services or facilities as a result of this Proposed Project.

2.1.16 RECREATION

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. Recreation. Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

2.1.16.1 Environmental Setting

The Proposed Project site is located adjacent to and within the east side of the Sacramento River and SR 160, an area used for a multitude of recreational activities. Recreational activities in the surrounding areas consist of fishing and boating. But the Proposed Project site itself is enclosed with a locked gate, and only accessible by DWR and an adjacent property owner. The public does not have access to the Proposed Project area.

2.1.16.2 Discussion

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?

No impact. Public access to the Proposed Project area is not available and will not be available in the future; so it will not increase the use of existing neighborhoods or regional parks or other recreational facilities. Consequently, no impacts are anticipated to potentially increase the use of recreational facilities as a result of the Proposed Project.

b) Would the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

No impact. The Proposed Project activities do not include recreational facilities or require the construction or expansion of recreational facilities. The Sacramento River will not experience any adverse effect from the Proposed Project; so it will not impact the recreational uses the Sacramento River has to offer the public. Consequently, no impacts to recreational facilities that may cause an adverse physical effect on the environment are anticipated as a result of the Proposed Project.

2.1.17 TRANSPORTATION

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

2.1.17.1 Environmental Setting

The Proposed Project site is located in Sacramento County on State-owned land associated with an abandoned fish-screen testing facility constructed by DWR. The

Proposed Project area will be accessed via SR 160. Local and regional roads within the vicinity of the Proposed Project will be used to haul equipment and materials to and from the Proposed Project area.

2.1.17.2 Discussion

a) Would the project conflict with a program, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian?

No impact. The main routes of traffic to and from the site include SR 160 and Hood Franklin Road. The Proposed Project would not adversely impact SR 160, Hood-Franklin Road, or any other local or regional roads in the vicinity of the Proposed Project site. Haul trucks will potentially utilize public roads to access three State- and county-approved recycle and solid waste disposal facilities within 30 miles (one-way) of the Proposed Project site. These trips would be staggered through the day during non-peak commute hours, when feasible, and would not impact the circulation of traffic.

Adjacent to the Proposed Project area is a public parking lot for an industrial warehouse facility. But construction equipment will be transported to the Proposed Project site once and will be left at the staging and stockpile areas within the Proposed Project area after each workday. Consequently, the Proposed Project will not impact any public parking. Public transit does not exist in the immediate vicinity of the Proposed Project site. While bicycle and pedestrian facilities exist in the area, the Proposed Project would not affect public use of any of these facilities. Worker commute trips would be minor during the work period, truck trips would be staggered throughout the workday, and no road closures or obstructions to standard roadway flow (including bicyclists and pedestrians) are included as part of the Proposed Project. Consequently, no impacts are anticipated to a program, ordinance, or policy addressing the circulation system as a result of the Proposed Project.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

No impact. The Proposed Project would not adversely impact any local or regional roads in the Proposed Project vicinity. The equipment would be stored at one of the staging/stockpile areas and would be hauled in and out before and after the Proposed Project components are completed. Traffic from the Proposed Project would not be expected to increase substantially compared to existing conditions. Consequently, the Proposed Project would not conflict with CEQA Guidelines section 15064.3 subdivision (b), and there would be no impact**.**

c) Would the project substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No impact. The Proposed Project would not include any change to roadway design or incompatible uses in the Proposed Project vicinity. Consequently, there would be no impact on increasing hazards as a result of the Proposed Project.

d) Would the project result in inadequate emergency access?

No impact. Construction equipment would not interfere with emergency access on SR 160, Hood-Franklin Road, or any other local or regional roads within the vicinity of the Proposed Project site. The Proposed Project would not include any road or lane closures. Consequently, no impacts are anticipated to emergency access as a result of the Proposed Project.

2.1.18 TRIBAL CULTURAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Tribal Cultual 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	☐	☒	☐	☐
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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.	☐	☒	☐	☐

2.1.18.1 Introduction

This chapter examines the potential impacts of the Proposed Project on Tribal cultural resources (TCRs). The Proposed Project site is a 1.25-acre area located in a graveled levee crown as well as adjacent to and within the Sacramento River in Hood, California.

TCRs are defined under Public Resources Code Section 21074 as sites, features, places, geographically defined cultural landscapes, sacred places, or objects with cultural value to a California Native American Tribe. In order to qualify as a TCR, the

resource must be listed or eligible for listing in the California Register of Historical Resources (CRHR) or be determined to meet CRHR criteria by the agency after considering the significance of the resource to the Tribe.

2.1.18.2 Regulatory Setting

State laws and regulations providing the definitions, protections, and management of Tribal cultural resources relevant to this Proposed Project include:

- California Public Resources Code, Section 21074 (AB 52).
- California Environmental Quality Act, Public Resources Code, section 20180.3.1 (b).
- California Public Resources Code sections 5020.1, 5024.1, 5097.94, and 5097.98.
- California Health and Safety Code section 7050.5(b) and 7050.5(c).

2.1.18.3 Environmental Setting

The Proposed Project site lies primarily within the traditional Tribal territory of the Miwok, with the Nisenan occupying the region directly to the north of the Proposed Project site. It is important to recognize that the outlines of these territories have been defined primarily through ethnographically reported boundaries. It is also important to remember that groups had multiple Tribes belonging to them (Kroeber 1976 [1925]; Latta 1977), and that divisions between groups weren't as clear cut as presented in published studies, as many Tribes shared different practices, including rituals, trade networks, and food ways (Kroeber 1976 [1925]; Heizer 1978).

The Plains and Bay Miwok are from the greater Miwokan language subgroup and occupied the area from the south of Suisun Bay and around Mount Diablo, north along the Sacramento River to just south of the City of Sacramento, and east along the Cosumnes and Mokelumne rivers (Levy 1978). Kroeber (1925) does not depict any Miwok villages near the Proposed Project site (Plate 37).

The main living structure was referred to as a kocha or uchu and was an earth-covered semi-subterranean structure. Bark lean-tos were used in the mountainous areas and in the summertime. A cache or granary was used for the outdoor storage of acorns.

Miwok peoples were organized into moieties, both totemic and hereditary. Each moiety was associated with a particular plant or animal and a totemic name was given at infancy (Kroeber 1976 [1925]: 453).

The Miwok version of the Kuksu cult involved male secret societies, the impersonation of spirits, distinct costumes, and large, semi-subterranean dance houses known as hangi (Kroeber 1976 [1925]:446). Rituals were frequently held to help guarantee the renewal of

plant and animal foods that were important to the Tribe's subsistence. Miwok preferred to cremate their dead. Food consisted of deer, jack rabbit, squirrel, waterfowl (ducks, geese), freshwater shells, insects and insect larvae, salmon eggs, roots, and acorns (black oak was preferred).

By the 1830s, Miwok in the lower San Joaquin and Sacramento valleys were removed to Mission San Jose for conversion to Christianity and Spanish lifeways (Beckham 2016: 7). On September 18, 1851, the Treaty of the Forks of the Cosumnes River ceded lands to the Miwok on which the Wilton Rancheria in Sacramento County was later established (Wilton Rancheria 2019); but the treaty was never ratified. In July 1928, the U.S. government obtained land in trust for the Miwok Tribal members living in Sacramento County. This was a 38.77-acre tract of land in Wilton, California, that had been purchased from the Cosumnes Company.

This formally established a land base for the Wilton Rancheria. In 1964, the Rancheria lost their federally recognized status, not long after the passage of the Rancheria Act, which terminated federal trust responsibilities to 41 California Native American Tribes. In 2009, Wilton Rancheria was able to obtain federal recognition (Wilton Rancheria 2019).

2.1.18.4 Tribal Cultural Resource Inventory Methods

To identify any potential Tribal cultural resources present within the Proposed Project site, the following steps were conducted:

- Reviewed existing information on previously recorded cultural resources within or near the Proposed Project site located in-house. This included the results of record searches conducted in 2019 for the *Soils Investigations for Data Collection in the Delta IS/MND* and additional data located in DWR's cultural resource geodatabase.
- Requested a Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search on June 22, 2021, for the Proposed Project site. The NAHC maintains a confidential file, which contains sites of traditional, cultural, or religious value to the Native American community.
- Conducted a pedestrian archaeology survey of the Proposed Project site on July 1, 2021. Survey methods consisted of using parallel transects spaced no more than five meters (15 feet) apart over the entire Proposed Project site.
- Reviewed information on soils, geology, and topography of the Proposed Project site to assess the potential for buried archaeological deposits.

DWR contacted six Tribes under AB 52 via certified mail on August 24, 2021 (Table 10) (Appendix C. Tribal Consultation). These Tribes included Buena Vista Rancheria of Me-Wuk Indians, Ione Band of Miwok Indians, Shingle Springs Band of Miwok Indians, United Auburn Indian Community, Wilton Rancheria, and the Yocha Dehe Wintun Nation. Three Tribes were contacted by DWR via certified mail on August 24, 2021, as

part of DWR's Tribal Engagement Policy. These Tribes included the Chicken Ranch Rancheria of Me-Wuk Indians, Nashville Enterprise Miwok-Maidu-Nishinam Tribe, and the Tski Akim Maidu. Follow-up phone calls were made on September 28, 2021, to the six Tribes who did not respond to the initial outreach letters (Table 10).

Table 10. Tribal Outreach

Communication Type	Date	Individual	Recipient	Topics Discussed	Comments
Buena Vista Rancheria (AB 52)					
Letter	8/24/2021	Leah McNearney, DWR Environmental Assessments & Permitting Section Manager	Mr. Ivan Senock, Tribal Historic Preservation Officer (THPO), Buena Vista Rancheria	Project purpose, location, brief description, map of project area, invitation to consult under AB 52	Initial project notification letter, sent certified mail
Email	8/24/2021	Connor Hendricks, DWR Cultural Resources Staff	Mr. Ivan Senock, THPO, Buena Vista Rancheria	Project purpose, location, brief description, map of project area, invitation to consult under AB 52	Initial project notification letter, sent email
Phone Call	9/28/2021	Connor Hendricks, DWR Cultural Resources Staff	Mr. Ivan Senock, THPO, Buena Vista Rancheria	Follow up to notification letter, THPO not in office for the rest of the week	Left message with admin with contact information
Chicken Ranch Rancheria of Me-Wuk Indians (Non-AB 52)					
Letter	8/24/2021	Leah McNearney, DWR Environmental Assessments & Permitting Section Manager	Lloyd Mathiesen, Chairperson, Chicken Ranch Rancheria of Me-Wuk Indians	Project purpose, location, brief description, map of project area, invitation to consult under NCRS Policy	Initial project notification letter, sent certified mail

Communication Type	Date	Individual	Recipient	Topics Discussed	Comments
Email	8/24/2021	Connor Hendricks, DWR Cultural Resources Staff	Lloyd Mathiesen, Chairperson, Chicken Ranch Rancheria of Me-Wuk Indians	Project purpose, location, brief description, map of project area, invitation to consult under NCRS Policy	Initial project notification letter, sent email
Email	8/25/2021	Lloyd Mathiesen, Chairperson	Connor Hendricks, DWR Cultural Resources Staff	The Tribe will not be consulting at this time.	None
Ione Band of Miwok Indians (AB 52)					
Letter	8/24/2021	Leah McNearney, DWR Environmental Assessments & Permitting Section Manager	Sara Dutschke Setshwaelo, Chairperson, Ione Band of Miwok Indians	Project purpose, location, brief description, map of project area, invitation to consult under AB 52	Initial project notification letter, sent certified mail
Email	8/24/2021	Connor Hendricks, DWR Cultural Resources Staff	Sara Dutschke Setshwaelo, Chairperson, Ione Band of Miwok Indians	Project purpose, location, brief description, map of project area, invitation to consult under AB 52	Initial project notification letter, sent email

Communication Type	Date	Individual	Recipient	Topics Discussed	Comments
Phone Call	9/28/2021	Connor Hendricks, DWR Cultural Resources Staff	Administration, Cultural Resources Department, Ione Band of Miwok Indians	Voicemail; follow up to letter with contact information	Left voicemail at the Cultural Department
Nashville Enterprise Miwok-Maidu-Nishinam Tribe (Non – AB 52)					
Letter	8/24/2021	Leah McNearney, DWR Environmental Assessments & Permitting Section Manager	Cosme Valdez, Chairperson, Nashville Enterprise Miwok-Maidu-Nishinam Tribe	Project purpose, location, brief description, map of project area, invitation to consult under NCRS Policy	Initial project notification letter, sent certified mail
Email	8/24/2021	Connor Hendricks, DWR Cultural Resources Staff	Cosme Valdez, Chairperson, Nashville Enterprise Miwok-Maidu-Nishinam Tribe	Project purpose, location, brief description, map of project area, invitation to consult under NCRS Policy	Initial project notification letter, sent email
Phone Call	9/28/2021	Connor Hendricks, DWR Cultural Resources Staff	Administration, Nashville Enterprise Miwok-Maidu-Nishinam Tribe	Left voicemail; follow up to letter, provided contact info	Left voicemail with Admin

Communication Type	Date	Individual	Recipient	Topics Discussed	Comments
Shingle Springs Band of Miwok Indians (AB 52)					
Letter	8/24/2021	Leah McNearney, DWR Environmental Assessments & Permitting Section Manager	Regina Cuellar, Chairperson, Shingle Springs Band of Miwok Indians	Project purpose, location, brief description, map of project area, invitation to consult under AB 52	Initial project notification letter, sent certified mail
Email	8/24/2021	Connor Hendricks, DWR Cultural Resources Staff	Regina Cuellar, Chairperson, Shingle Springs Band of Miwok Indians	Project purpose, location, brief description, map of project area, invitation to consult under AB 52	Initial project notification letter, sent email
Email	9/23/2021	Unhelica Vasquez, Administrative Assistant, Shingle Springs Band of Miwok Indians	Leah McNearney, DWR Environmental Assessments & Permitting Section Manager	Letter of intention to consult	Request for project material and studies
Email	9/28/2021	Connor Hendricks, DWR Cultural Resources Staff	Kara Perry, Site Protection Manager, Shingle Springs Band of Miwok Indians	Acknowledgement of intention to consult on project	Acknowledged request, follow-up to come

Communication Type	Date	Individual	Recipient	Topics Discussed	Comments
Tsi Akim Maidu (Non – AB 52)					
Letter	8/24/2021	Leah McNearney, DWR Environmental Assessments & Permitting Section Manager	Grayson Coney, Cultural Director, Tsi Akim Maidu	Proposed Project purpose, location, brief description, map of project area, invitation to consult under NRCS Policy	Initial project notification letter, sent certified mail
Email	8/24/2021	Connor Hendricks, DWR Cultural Resources Staff	Grayson Coney, Cultural Director, Tsi Akim Maidu	Proposed Project purpose, location, brief description, map of project area, invitation to consult under NCRS Policy	Initial project notification letter, sent email
Phone Call	9/28/2021	Connor Hendricks, DWR Cultural Resources Staff	Grayson Coney, Cultural Director, Tsi Akim Maidu	Grayson Coney no longer holds Cultural Director position. Followed up with call to phone number listed on website, no longer in use	Was unable to leave message. Will follow up with NAHC to get correct contact information.
United Auburn Indian Community of the Auburn Rancheria (AB 52)					
Letter	8/24/2021	Leah McNearney, DWR Environmental Assessments & Permitting Section Manager	Gene Whitehouse, Chairperson, United Auburn	Proposed Project purpose, location, brief description, map of project area, invitation to consult under AB 52	Initial project notification letter, sent certified mail

Communication Type	Date	Individual	Recipient	Topics Discussed	Comments
Email	8/24/2021	Connor Hendricks, DWR Cultural Resources Staff	Gene Whitehouse, Chairperson, United Auburn	Proposed Project purpose, location, brief description, map of project area, invitation to consult under AB 52	Initial project notification letter, sent email
Phone Call	9/28/2021	Connor Hendricks, DWR Cultural Resources Staff	Matthew Moore, THPO, United Auburn	Admin advised that cultural team was in the field. Left a message with my contact information	Spoke with admin who said they would pass along contact information to the cultural team when they were available
Wilton Rancheria (AB 52)					
Letter	8/24/2021	Leah McNearney, DWR Environmental Assessments & Permitting Section Manager	Jesus Tarango, Chairperson, Wilton Rancheria	Proposed Project purpose, location, brief description, map of project area, invitation to consult under AB 52	Initial project notification letter, sent certified mail
Email	8/24/2021	Connor Hendricks, DWR Cultural Resources Staff	Jesus Tarango, Chairperson, Wilton Rancheria	Proposed Project purpose, location, brief description, map of project area, invitation to consult under AB 52	Initial project notification letter, sent email

Communication Type	Date	Individual	Recipient	Topics Discussed	Comments
Email	8/25/2021	Paramdeep Sandu, Cultural Resources Staff, Wilton Rancheria	Connor Hendricks, DWR Cultural Resources Staff	Response to invitation to consult. A list of materials and actions requested.	Intend to consult letter sent via email
Email	9/16/2021	Connor Hendricks, DWR Cultural Resources Staff	Paramdeep Sandu, Cultural Resources Staff, Wilton Rancheria	Acknowledgement of intent to consult; a more detailed response to follow	To be followed up with physical letter
Letter	9/23/2021	Connor Hendricks, DWR Cultural Resources Staff	Paramdeep Sandu, Cultural Resources Staff, Wilton Rancheria	Acknowledgement of intent to consult; a more detailed response to follow	Physical letter follow-up
Yocha Dehi Wintun Nation (AB 52)					
Letter	8/24/2021	Leah McNearney, DWR Environmental Assessments & Permitting Section Manager	Anthony Roberts, Chairperson, Yocha Dehe	Proposed Project purpose, location, brief description, map of project area, invitation to consult under AB 52	Initial project notification letter, sent certified mail
Email	8/24/2021	Connor Hendricks, DWR Cultural Resources Staff	Anthony Roberts, Chairperson, Yocha Dehe	Proposed Project purpose, location, brief description, map of project area, invitation to consult under AB 52	Initial project notification letter, sent email

Communication Type	Date	Individual	Recipient	Topics Discussed	Comments
Phone Call	9/28/2021	Connor Hendricks, DWR Cultural Resources Staff	Laverne Bill, Cultural Staff, Yocha Dehe	Directed to Laverne Bill by Admin. Left voicemail with my contact information	Spoke with Admin, directed to Laverne Bill. No answer, left message
Phone Call	9/28/2021	Connor Hendricks, DWR Cultural Resources Staff	Laverne Bill, Cultural Staff, Yocha Dehe	Spoke with Laverne Bill. Yocha Dehi would not be consulting.	Stated that the Yocha Dehi cultural area is on the west bank of the Sacramento River.

2.1.18.5 Tribal Cultural Resources Inventory Results

Record searches, ethnographic research, and pedestrian survey of the Proposed Project site did not result in the identification of any TCRs within or near the Proposed Project site. In addition, a search of the NAHC SLF came back negative. Five of the Tribes consulted under AB 52 responded to the initial outreach letter, and one Tribe consulted under DWR's Tribal Engagement Policy, the Chicken Ranch Rancheria of Me-Wuk Indians, responded.

The results of the inventory efforts for TCRs are summarized below.

2.1.18.5.1 Record Search Results

In-house review of previously recorded cultural resources and cultural resources records indicated that four previous cultural resources studies have been conducted within the Proposed Project site and seven have been conducted within a quarter-mile radius of the Proposed Project site. Please see Section 2.1.5, Cultural Resources, for more information on these studies.

2.1.18.5.1.1 CHRIS Record Search Results

Previous cultural resources studies of the Proposed Project site identified one resource (P-34-002143) within the Proposed Project site and three resources within a quarter mile radius of the Proposed Project footprint.

P-34-002143 is Unit 115 of the Sacramento River Flood Control Project Levee. It is an earthen levee constructed between 1937 and 1953. Unit 115 was recommended eligible for inclusion in the National Register of Historic Places.

The three resources located within a quarter mile radius of the Proposed Project site include an alignment of the Walnut Grove Railroad of the Southern Pacific Railroad (P-34-001497), a set of concrete stairs that extend from the crest of the levee to the banks of the Sacramento River (P-34-002135), and a prehistoric mound site (P-34-000089).

Site P-34-000089 was first recorded by Heizer in 1934 and later revisited by surveyors from the American River Junior College in 1959 (Hartman 2007). The site description is limited and notes that a large barn covered the site and that the site was located next to a house in a lettuce field. Neither the 1934 record nor the 1959 record describes any description of artifacts or soil type. Far Western Anthropological Research Group, Inc. attempted to relocate the site in 2007 for the Caltrans District 3 Rural Conventional Highways Survey Project but were unable to do so (Hartman 2007).

2.1.18.5.1.2 NAHC Sacred Lands File Search

DWR requested a NAHC search of the SLF on June 22, 2021, for the Proposed Project site. Results were returned on July 14, 2021, and were negative for cultural and TCRs

in and near the Proposed Project. The NAHC provided a list of contacts for 13 individuals (representing nine Tribes) with traditional cultural affiliation with the Proposed Project area and who may have knowledge of resources within or near the Proposed Project site (Appendix C. Tribal Consultation). DWR reached out to these Tribes as part of their Tribal Engagement Policy and for AB 52 on August 24, 2021 (see previous discussion).

2.1.18.5.2 Tribal Consultation Results

Four of the Tribes contacted as part of AB 52 responded — Shingle Springs Band of Miwok Indians, United Auburn Indian Community, Wilton Rancheria, and the Yocha Dehi Wintun Nation (see Table 1, Appendix C. Tribal Consultation).

Unhelica Vasquez, Administrative Assistant for the Shingle Springs Band of Miwok Indians, responded via email on September 23, 2021, stating that the Tribe intends to consult with DWR under AB 52 for the Proposed Project and requested additional project materials. DWR acknowledged the intention to consult under AB 52 via email on September 28, 2021, and is in the process of providing the requested materials to the Tribe.

When contacted via phone call on September 28, 2021, administrative staff for Matthew Moore, Tribal Historic Preservation Officer with the United Auburn Indian Community, stated that the Tribe's cultural team was currently in the field and that they would pass along DWR's contact information to the Tribe's cultural team when they were back in the Tribal office.

Paramdeep Sandu, Tribal Cultural Staff with Wilton Rancheria, responded via email on August 25, 2021, stating that the Tribe intends to initiate a consultation with DWR. DWR staff sent an email on September 16, 2021, and a letter on September 23, 2021, to Mr. Sandu, acknowledging the Tribe's intent to consult under AB 52.

On September 28, 2021, DWR staff spoke with Yocha Dehe Cultural Staff Laverne Bill, who informed DWR that the Tribe did not wish to consult with DWR and that their traditional territory was on the west bank of the Sacramento River, and therefore outside the Proposed Project area.

Of the three Tribes contacted under DWR's Tribal Engagement Policy, the Chicken Ranch Rancheria of Me-Wuk Indians responded via email on August 25, 2021, stating that the Tribe does not wish to consult presently.

2.1.18.5.3 Pedestrian Survey

No archaeological resources were identified during a pedestrian survey of the Proposed Project site.

2.1.18.5.4 Buried Site Sensitivity

The Proposed Project site is located in an area with heavy disturbance from construction and maintenance of the Sacramento River's levee, the fish-screen testing facility structures, and historical development/use of the Proposed Project site. Soils in the Proposed Project site consist of partially draining silty/clay loams derived from igneous, metamorphic, and sedimentary rock (U.S. Department of Agriculture 2021) and are located by natural levees on floodplains. These soils are considered prime farmland if irrigated.

According to Meyer and Rosenthal (2008), the majority of radiocarbon-dated sites from the Sacramento Valley are associated with late Holocene surface landforms and contain human occupation sites dating no more than a few thousand years old (Page 159). Fans and floodplains, such as those in the Project site, consistently contain buried archaeological deposits and are considered to have a moderate-to-high potential for buried archaeological deposits (Meyer and Rosenthal 2008: 159).

Although no prehistoric archaeological sites or TCRs have been identified within the Proposed Project site, areas along waterways, especially rivers, are highly sensitive for cultural deposits because of a long-standing tendency to rely on waterways as a source of water and food, for transportation, and as trade routes.

High elevation points along these waterways are common locations of prehistoric mounds and middens, which are complex deposits of cultural materials and organic matter, sometimes including human burials and occupation features, that can be found subsurface as deep as 3.5 meters depending on the age, soil deposition pattern, and length of occupation (Rosenthal et al. 2007). This is particularly important to note as mounds were densely located along major waterways according to early twentieth century documentation (one mound every 2-3 miles) (Schenck and Dawson 1929). Several mound sites have been documented in the vicinity of the Proposed Project site.

Many of these were disturbed or obscured by agricultural development, levee construction, and erosion (Rosenthal et al. 2007), but this does not mean the cultural material is not still present within these areas or that it no longer holds value to the living descendants of the Tribes that historically occupied the region.

Historical-to-modern aged artificial fills and cuts (including levees, sloughs, canals, and dredge spoils) are not easy to predict for buried deposits, as prehistoric material was frequently ignored before federal regulations were established to protect archaeological material. During construction of these features, archaeological sites of any age, including prehistoric mounds, were frequently disturbed via cuts, used as artificial fill for structures such as levees, or were completely buried underneath artificial fill.

2.1.18.5.5 Tribal Cultural Resources

Record searches and archival research, a NAHC SLF search, and a pedestrian survey, did not result in the identification of any TCRs within the Proposed Project area. To date, Tribal consultation did not result in the identification of any TCRs in or near the Proposed Project area.

2.1.18.6 Discussion

Would the Proposed 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:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code 5020.1 (k), or

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe?

Less than significant with mitigation incorporated. Record searches and archival research, a NAHC search of the SLF, pedestrian survey, and Tribal consultation conducted for the Proposed Project, did not result in the identification of any TCRs in or adjacent to the Proposed Project site.

Although no TCRs have been identified within the vicinity of the Proposed Project site, there is the potential for uncovering previously unknown TCRs during Proposed Project construction. If Proposed Project construction activities were to affect previously unknown TCRs in a manner that would damage their cultural value, a significant impact could result. Implementation of the protection measures included in Mitigation Measures CUL-1 and CUL-4 (refer to the Cultural Resources section) would reduce potential impacts to less than significant.

2.1.19 UTILITIES AND SERVICE SYSTEMS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c) Result in a determination by the wastewater treatment provider that 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reductions statutes and regulations related to solid waste?	☐	☐	☐	☒

2.1.19.1 Environmental Setting

The Proposed Project is located along the Sacramento River in Hood, California, in Sacramento County. The Proposed Project is situated on a graveled levee crown, between the Sacramento River and SR 160. Utilities within the Proposed Project area include trenched electrical conduits and water pipes associated with the abandoned

fish-screen testing facility. These conduits and pipes were abandoned when the facility was decommissioned and do not serve any other structure.

Additionally, an old 1000-gallon septic tank and leach field are located on the south side of the Proposed Project area, which serviced trailers that were once located on the property. The septic system and leach field will be excavated as part of the Proposed Project activities.

The City of Hood is serviced by localized sewer systems. There are no known public utilities within the Proposed Project footprint, including wastewater treatment facilities or stormwater drainage facilities.

2.1.19.2 Discussion

a) Would the project 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, the construction or relocation of which could cause significant environmental effects?

No impact. The Proposed Project will not require or result in the relocation of construction of new or expanded utilities. Consequently, no impacts are anticipated to water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications as a result of the Proposed Project.

b) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

No impact. The Proposed Project will have sufficient water to supply water trucks for dust suppression during construction. The Proposed Project would not result in the development of a new facility or structure that would require a water supply and is not related to any future developments. Consequently, no impacts are anticipated to current or future water supply as a result of the Proposed Project.

c) Would the project result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?

No impact. The Proposed Project will not create a need for increased wastewater treatment capacity. Consequently, no impacts are anticipated as a result of the Proposed Project.

d) Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

No impact. The Proposed Project would not 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. Consequently, no impacts are anticipated as a result of the Proposed Project.

e) Would the project comply with federal, State, and local management and reductions statutes and regulations related to solid waste?

No impact. The Proposed Project will comply with federal, State, and local management and reduction statutes and regulations related to solid waste. Consequently, no impacts are anticipated as a result of the Proposed Project.

2.1.20 WILDFIRE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☒	☐

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?	☐	☐	☐	☒

2.1.20.1 Environmental Setting

In California, wildfire protection jurisdictions are separated and overseen by three areas of government: local, State, and federal. Each of the three areas have determined Fire Hazard Severity Zones (FHSZ) within each county. The zone classification is based on a multitude of factors: fire behavior models using vegetation density, adjacent wildland areas, and distance to wildland areas, another factor being the probability of a fire threatening nearby structures.

According to CAL FIRE (2008), the Proposed Project footprint, surrounding lands, and access roads are local responsibility areas (LRAs). The Proposed Project location is considered a Non-VHFHSZ (Very High Fire Hazard Severity Zone) within this LRA. The zone classification is based on data and models of potential fuels over a 30- to 50-year time horizon and their associated expected fire behavior and expected burn probabilities to quantify the likelihood and nature of vegetation fire exposure, including firebrands, to buildings (California Department of Forestry and Fire Protection 2008).

The Proposed Project area is provided fire protection by local government cooperators and is served by the Courtland Fire District (Sacramento County 2017). The Courtland Fire Department is located approximately 0.5 mile east of the Proposed Project location.

2.1.20.2 Discussion

a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

No impact. The Proposed Project is on State-owned land and will be accessed via existing roads off SR 160 and Hood Franklin Road. The Proposed Project will not impact public roads or highways, will not cause rerouting of traffic or road closures, and construction activities will not result in emergency vehicles or law enforcement delays. Staging and stockpile areas will be planned within the Proposed Project area and outside of public roads and highways. A Fire Prevention and Control Plan will be prepared prior to the Proposed Project activities and will include appropriate preventative measures, emergency procedures to be followed, current emergency telephone numbers, and an area map. Consequently, no impact is anticipated to local emergency response plans or emergency evacuation plans as a result of the Proposed Project.

b) Would the project, because of 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?

Less than significant impact. Trees and shrubby and ruderal vegetation occur on the waterside levee within the Proposed Project area, which increases the potential for heavy equipment and vehicles actively working on the site to exacerbate wildfire risks. But, for the purpose of finalizing the Proposed Project tree limbing and cutting, maintenance has already been conducted resulting in a decreased potential of wildfire risk. Furthermore, safety meetings, water truck usage, and an overview of the JHA prior to Proposed Project activities will decrease the potential wildfire risk. Consequently, impacts resulting from pollutant concentrations from a wildfire will be less than significant as a result of the Proposed Project.

c) Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

No impact. The Proposed Project does not include the installation or maintenance of infrastructures. Removal activities are not expected to exacerbate fire risk or result in temporary or ongoing impacts on the environment. Safety and emergency response services will be covered in the Proposed Project's Job Hazards Analysis (JHA) daily to ensure safe operations while on the Proposed Project site. Consequently, no impact is anticipated from the installation of infrastructure as a result of the Proposed Project.

d) Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No impact. The Proposed Project has been designed to remove remnants of an abandoned fish-screen testing facility to comply with regulations that protect floodways and flood control structures. The Proposed Project will rebuild the levee prism and riverbank affected by Proposed Project activities. The Proposed Project will have no impact on people or structures that could pose significant risks through downslope or downstream flooding or landslide, as a result of runoff, post-fire slope instability, or drainage changes. Consequently, no impact is anticipated from downslope or downstream flooding or landslide as a result of the Proposed Project.

2.1.21 MANDATORY FINDINGS OF SIGNIFICANCE

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

2.1.21.1 Discussion

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?

Less than significant with mitigation incorporated. As discussed in the Initial Study, the Proposed Project has the potential to impact cultural and Tribal cultural resources. With the implementation of mitigation measures, the Proposed Project would have a less than significant impact on the quality of these environmental resources and it would preserve important examples of the major periods of California history or prehistory.

The implementation of AMMs and BMPs for Air Quality (Section 2.1.3), Biological Resources (Section 2.1.4), Hazards Hazardous Materials (Section 2.1.9), Noise (Section 2.1.13), and Wildfire (Section 2.1.20) would further ensure the Proposed Project will reduce construction-related emissions from heavy-duty equipment and vehicles, reduce noise pollution, prevent fires in Proposed Project area and minimize the potential for erosions along the East Levee. Implementation of AMMs would not 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, reduce the number, or restrict the range of a rare or endangered plant or animal.

Because of the Proposed Project's incorporation of Mitigation Measures 1-4 to offset potential impacts to a less than significant level to cultural and Tribal cultural cesources, the Proposed Project's impacts to the environment and its resources would be considered less than significant with the incorporation of mitigation, as a result of the Proposed Project.

b) Does the project have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" meant that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of the other current projects, and the effects of probable future projects)?

Less than significant with mitigation incorporated. Cumulative effects, including the effects of past, current, and future State, Tribal, local, or private actions that are reasonably certain to occur in the Proposed Project area are considered in this study.

Past and current projects:

The Proposed Project is Phase 3 of a Revised Removal and Repair Plan issued by DWR after being notified by CVFPB of the immediate need to prevent water infiltration into the pipes that caused the sinkholes into the levee.

- Phase 1. Site investigation. Completed October 24, 2019.
- Phase 2. Sinkhole repairs and capping of the pipes. Completed November 19, 2020.
- Phase 3 (Proposed Project). Remnant facilities and pipe removal. The Proposed Project is discussed and evaluated in this document. Proposed to begin in 2022.

The Proposed Project's intent is to restore the structure and function of the levee to its conditions prior to the installation of the fish-screen testing facility in compliance with the California Water Code, Division 5, Part 4, Title 23 of the California Code of Regulations Section 124. All impacts to cultural resources and Tribal cultural resources that could

occur as a result of the Proposed Project would be reduced to a less than significant level through the implementation of mitigation measures. No other projects are being conducted at the Proposed Project area at this time.

Probable future projects:

1. Fence Replacement and Gate Separation — This project will include replacement some of the fencing and a gate separating the Hood station laydown yard and SR 160. Part of that project would include running conduit from the energy meter, located near the entrance of the Hood station walkway, to a new automatic gate. This project is still in the planning stages and the project timeline will be better understood after finding the project boundaries from the Proposed Project activities.

2. Delta Conveyance Project (DCP) — A proposal to modernize water infrastructure in the Delta by creating an additional point of diversion along the Sacramento River coupled with conveyance facilities in the Delta. This change in the point of diversion is intended to restore and protect the reliability of State Water Project and, potentially, Central Valley Project water deliveries south of the Delta to ensure California's largest supply of clean water is climate resilient.

When viewed in connection with the above-mentioned past, current, and probable future actions, the Proposed Project impacts would not be cumulatively considerable because the Proposed Project would be short-term and localized. The Proposed Project will implement AMMs and BMPs to avoid and reduce impacts on environmental resources and/or mitigation measures to offset potential significant impacts to less than significant. Consequently, cumulative impacts would be considered less than significant with mitigation incorporated.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less than Significant Impact. Potential impacts from the Proposed Project would be short-term, temporary, and localized. Proposed Project activities will not have substantial direct or indirect adverse environmental impacts on humans. Furthermore, the intent of the Proposed Project is to restore the structure and function of the levee to its condition prior to the installation of the fish-screen testing facility in compliance with the California Water Code, Division 5, Part 4, Title 23 of the California Code of Regulations to protect the public and property from catastrophic flooding. Consequently, impacts to humans are anticipated to be less than significant due to the Proposed Project.

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4.0 List of Preparers

Department of Water Resources (Lead Agency)

Division of Integrated Science and Engineering

Bayan Ahmed..... Environmental Scientist, Lead Document Preparation
Torianne Cahoon ..... Environmental Scientist, Lead Document Preparation
Sarah Zorn .....Senior Environmental Scientist, Lead Document Preparation
Clay Booher .....Senior Engineer, Document Preparation
Bijaya Shrestha .....Senior Engineer, Supervisor, Document Preparation
Jessica Barnes.....Senior Environmental Scientist, Supervisor, Document Preparation
Jacqueline Wait.....Senior Environmental Scientist, Supervisor, Document Preparation
Stephanie Chun .....Senior Environmental Scientist, Document Preparation
Veronica Wunderlich .....Senior Environmental Scientist, Document Preparation
Erica Hironaka.....Senior Environmental Scientist, Document Preparation
Connor Hendricks..... Environmental Scientist, Document Preparation
Sarah Heffner..... Environmental Scientist, Document Preparation
Mary Xiong ..... Environmental Scientist, Document Preparation
Malorie Sassman ..... Environmental Scientist, Document Preparation
Megan Brotherton ..... Environmental Scientist, Document Preparation
Mariela Morales..... Engineer, Document Preparation
Erica Rhyne-Christensen ..... Environmental Scientist, Document Preparation
Nita Superak .....Scientific Aide, Document Preparation

Division of Engineering

Ilene Wellman Barbree.....Senior Engineer, Document Review
Sarah Cannon ..... Senior Environmental Scientist, Specialist, Document Review

AECOM

Nagesh Malyala .....Civil Engineering I, Document Preparation
Omar Ragabo.....Associate Vice President, Document Preparation

Appendix A. Biological Species Table

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
PLANTS							
Amsinckia grandiflora	Large-flowered fiddleneck	FE/SE/1B.1	SB_UCBG-	Cismontane woodland, valley, and foothill grassland.	Annual grassland in various soils. 275-550 m.	None	No impact. Out of species range.
Astragalus tener var. ferrisiae	Ferris' milk-vetch	-/-/1B.1		Meadows and seeps, valley, and foothill grassland.	Subalkaline flats on overflow land in the Central Valley; usually seen in dry, adobe soil. 4-80 m.	None	No impact. No appropriate soils.
Astragalus tener var. tener	Alkali milk-vetch	-/-/1B.2		Alkali playa, valley and foothill grassland, vernal pools.	Low ground, alkali flats, and flooded lands; in annual grassland or in playas or vernal pools. 0-170 m.	None	No impact. Out of species range.
Azolla microphylla	Mexican mosquito fern	-/-/4.2		Marshes and swamps.	Ponds and still water. 30-100 m.	Low	No impact. May occur in standing water in Sac River but unlikely to occur in footprint.

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
Brasenia schreberi	Watershield	-/-/2B.3		Freshwater marshes and swamps.	Aquatic known from water bodies both natural and artificial in California. 1-2180 m.	Low	No impact. May occur in shallow, slow flowing portions of the Sacramento River, but habitat within and surrounding the footprint is likely unsuitable.
Carex comosa	Bristly sedge	-/-/2B.1		Marshes and swamps, coastal prairie, valley, and foothill grassland.	Lake margins, wet places; site below sea level is on a Delta island. -5-1010 m.	Low	No impact. More likely to occur in marsh or shallow water. Bank of river in footprint is very steep and riprap-lined.
Castilleja campestris var. succulenta	Succulent owl's-clover	FT/SE/1B.2		Vernal pools.	Moist places, often in acidic soils. 20-705 m.	None	No impact. No appropriate habitat.
Centromadia parryi ssp. parryi	Pappose tarplant	-/-/1B.2	BLM_S-	Chaparral, coastal prairie, meadows and seeps, coastal salt marsh, valley,	Vernally mesic, often alkaline sites. 1-500 m.	Low	No impact. Appropriate habitat, but soils

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
				and foothill grassland.			on site are marginal.
Centromadia parryi ssp. rudis	Parry's rough tarplant	-/-/4.2		Valley and foothill grasslands, vernal pools.	Alkaline, vernally mesic seeps; sometimes roadsides. 0-100 m.	Low	No impact. Appropriate habitat, but soils on site are marginal.
Cicuta maculata var. bolanderi	Bolander's water-hemlock	-/-/2B.1		Marshes and swamps.	In fresh or brackish water. 0-20 m.	Low	No impact. Unlikely to occur on riprapped levee.
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	-/-/2B.2		Marshes and swamps (freshwater).	Freshwater marsh. 15-280 m.	Low	No impact. Unlikely to occur on riprapped levee.
Downingia pusilla	Dwarf downingia	-/-/2B.2		Valley and foothill grassland (mesic sites), vernal pools.	Vernal lake and pool margins with a variety of associates. In several types of vernal pools. 1-490 m.	None	No impact. No appropriate habitat (site is not mesic).

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
Eryngium jepsonii	Jepson's coyote-thistle	-/-/1B.2		Vernal pools, valley, and foothill grassland.	Clay. 3-305 m.	None	No impact. No appropriate soils.
Extriplex joaquinana	San Joaquin spearscale	-/-/1B.2	BLM_S-SB_CalBG/RSABG-	Chenopod scrub, alkali meadow, playas, valley, and foothill grassland.	In seasonal alkali wetlands or alkali sink scrub with Distichlis spicata, Frankenia, etc. 0-800 m.	None	No impact. No appropriate soils.
Hesperevax caulescens	Hogwallow starfish	-/-/4.2		Valley and foothill grassland, vernal pools.	Clay soils; mesic sites. 0-505 m.	None	No impact. No appropriate soils.
Hibiscus lasiocarpos var. occidentalis	Woolly rose-mallow	-/-/1B.2	SB_CalBG/RSABG-SB_UCBG-	Marshes and swamps (freshwater).	Moist, freshwater-soaked riverbanks & low peat islands in sloughs; can also occur on riprap and levees. In California, known from the Delta watershed. 0-155 m.	**Moderate**	Less than significant impact. Potential to occur along the water on the levee.

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
Lasthenia chrysantha	Alkali-sink goldfields	-/-/1B.1		Vernal pools.	Alkaline. 0-200 m.	None	No impact. No appropriate soils.
Lasthenia ferrisiae	Ferris' goldfields	-/-/4.2		Vernal pools.	Alkaline, clay soils. 20-700 m.	None	No impact. No appropriate soils.
Lathyrus jepsonii var. jepsonii	Delta tule pea	-/-/1B.2	SB_BerrySB-SB_CalBG/RSABG-	Marshes and swamps.	In freshwater and brackish marshes. Often found with Typha, Aster lentus, Rosa californica, Juncus spp., Scirpus, etc. Usually on marsh and slough edges. 0-5 m.	**Moderate**	Less than significant impact. Potential to occur along the water on the levee.
Legenere limosa	Legenere	-/-/1B.1	BLM_S-SB_UCBG-	Vernal pools.	In beds of vernal pools. 1-1005 m.	None	No impact. No appropriate habitat.
Lepidium latipes var. heckardii	Heckard's peppergrass	-/-/1B.2		Valley and foothill grassland, vernal pools.	Grassland, and sometimes vernal pool edges. Alkaline soils. 1-30 m.	None	No impact. No appropriate habitat or soils.

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
Lilaeopsis masonii	Mason's lilaeopsis	-/SR/1B.1		Marshes and swamps, riparian scrub.	Tidal zones, in muddy or silty soil formed through river deposition or riverbank erosion. In brackish or freshwater. 0-10 m.	**Moderate**	Less than significant impact. Potenital to occur at the water's edge on the levee.
Limosella australis	Delta mudwort	-/-/2B.1		Riparian scrub, marshes, and swamps.	Usually on mud banks of the Delta in marshy or scrubby riparian associations; often with Lilaeopsis masonii. 0-5 m.	**Moderate**	Less than significant impact. Potential to occur at the water's edge on the levee.
Myosurus minimus ssp. apus	Little mousetail	-/-/3.1	SB_CRES-	Vernal pools, valley, and foothill grassland.	Alkaline soils. 20-640 m.	None	No impact. No appropriate habitat or soils.
Navarretia leucocephala ssp. bakeri	Baker's navarretia	-/-/1B.1		Cismontane woodland, meadows and seeps, vernal pools, valley, and foothill grassland,	Vernal pools and swales; adobe or alkaline soils. 3-1680 m.	None	No impact. No appropriate habitat or soils.

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
				lower montane coniferous forest.			
Neostapfia colusana	Colusa grass	FT/SE/1B.1		Vernal pools.	Usually in the bottoms of large, or deep vernal pools; adobe soils. 5-125 m.	None	No impact. No appropriate habitat or soils.
Orcuttia tenuis	Slender Orcutt grass	FT/SE/1B.1	SB_UCBG-	Vernal pools.	Often in gravelly substrate. 25-1755 m.	None	No impact. No appropriate habitat or soils.
Orcuttia viscida	Sacramento Orcutt grass	FE/SE/1B.1	SB_CalBG/RSABG-	Vernal pools.	15-85 m.	None	No impact. No appropriate habitat or soils.
Plagiobothrys hystriculus	Bearded popcornflower	-/-/1B.1		Vernal pools, valley, and foothill grassland.	Wet sites. 1-275 m.	Low	No impact. Site is not mesic/wet.
Puccinellia simplex	California alkali grass	-/-/1B.2	BLM_S-	Meadows and seeps, chenopod scrub, valley and	Alkaline, vernally mesic. Sinks, flats, and lake margins. 1-915 m.	None	No impact. No appropriate habitat or soils.

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
				foothill grasslands, vernal pools.			
Sagittaria sanfordii	Sanford's arrowhead	-/-/1B.2	BLM_S-	Marshes and swamps.	In standing or slow-moving freshwater ponds, marshes, and ditches. 0-605 m.	Low	No impact. Habitat is only marginally appropriate. Occurs in standing or slow moving water. Unlikely to occur in Sac River.
Scutellaria galericulata	Marsh skullcap	-/-/2B.2		Marshes and swamps, lower montane coniferous forest, meadows, and seeps.	Swamps and wet places. 0-1950 m.	Low	No impact. Unlikely to occur on the riprapped levee.
Scutellaria lateriflora	Side-flowering skullcap	-/-/2B.2		Meadows and seeps, marshes and swamps.	Wet meadows and marshes. In the Delta, often found on logs. 0-500 m.	Low	No impact. Unlikely to occur on the riprapped levee.

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
Sidalcea keckii	Keck's checkerbloom	FE/-/1B.1	SB_CalBG/RSABG-	Cismontane woodland, valley, and foothill grassland.	Grassy slopes in blue oak woodland. On serpentine-derived, clay soils, at least sometimes. 85-505 m.	Low	No impact. Habitat is only marginally appropriate.
Symphyotrichum lentum	Suisun Marsh aster	-/-/1B.2	SB_CalBG/RSABG-SB_USDA-	Marshes and swamps (brackish and freshwater).	Most often seen along sloughs with Phragmites, Scirpus, blackberry, Typha, etc. 0-15 m.	**Moderate**	Less than significant impact. Potential to occur at the water's edge.
Trifolium hydrophilum	Saline clover	-/-/1B.2		Marshes and swamps, valley and foothill grassland, vernal pools.	Mesic, alkaline sites. 1-335 m.	None	No impact. No appropriate habitat or soils.
Tuctoria mucronata	Crampton's tuctoria or Solano grass	FE/SE/1B.1	SB_CalBG/RSABG-	Vernal pools, valley and foothill grassland.	Clay bottoms of drying vernal pools and lakes in valley grassland. 5-15 m.	None	No impact. No appropriate habitat or soils.

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
INVERTEBRATES							
Anthicus antiochensis	Antioch Dunes anthicid beetle	-/-/-		Extirpated from Antioch Dunes but present in several localities along the Sacramento and Feather rivers.		None	No impact. No appropriate habitat.
Anthicus sacramento	Sacramento anthicid beetle	-/-/-	IUCN_EN-	Restricted to sand dune areas.	Inhabit sand slip faces among bamboo and willow but may not depend on presence of these plant species.	None	No impact. No appropriate habitat.
Bombus crotchii	Crotch bumble bee	-/Candidate SE/-		Coastal California east to the Sierra-Cascade crest and south into Mexico.	Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	**Moderate**	Less than significant impact. Appropriate habitat.
Branchinecta conservatio	Conservancy fairy shrimp	FE/-/-	IUCN_EN-	Endemic to the grasslands of the northern two-thirds of the Central Valley;	Inhabit astatic pools located in swales formed by old, braided alluvium;	None	No impact. There is no habitat within or immediately surrounding the

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
				found in large, turbid pools.	filled by winter/spring rains, last until June.		footprint based on field surveys.
Branchinecta lynchi	Vernal pool fairy shrimp	FT/-/-	IUCN_VU-	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools.	Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	None	No impact. There is no habitat within or immediately surrounding the footprint based on field surveys.
Branchinecta mesovallensis	Midvalley fairy shrimp	-/-/-		Vernal pools in the Central Valley.		None	No impact. There is no habitat within or immediately surrounding the footprint based on field surveys.

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
Callophrys mossii bayensis	San Bruno elfin butterfly	FE/-/-		Coastal, mountainous areas with grassy ground cover, mainly in the vicinity of San Bruno Mountain, San Mateo County.	Colonies are located on steep, north-facing slopes within the fog belt. Larval host plant is Sedum spathulifolium.	None	No impact. Out of species range.
Danaus plexippus pop. 1	Monarch - California overwintering population	-/-/-	USFS_S-	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico.	Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	None	No impact. No coniferous forest; the closest CNDDB occurrence is more than 10 miles away.
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	FT/-/-		Occurs only in the Central Valley of California, in association with blue elderberry (Sambucus mexicana).	Prefers to lay eggs in elderberries 2-8 inches in diameter; some preference shown for "stressed" elderberries.	**Moderate**	Less than significant impact. Suitable riparian habitat but no appropriate host plants.

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
Elaphrus viridis	Delta green ground beetle	FT/-/-	IUCN_CR-	Restricted to the margins of vernal pools in the grassland area between Jepson Prairie and Travis AFB.	Prefers the sandy mud substrate where it slopes gently into the water, with low-growing vegetation, 25-100% cover.	None	No impact. Out of species range.
Hydrochara rickseckeri	Ricksecker's water scavenger beetle	-/-/-		Aquatic.		None	No impact. Recent analysis suggests this species is a vernal pool specialist (Short et al. 2017), but it may occur in smaller flowing waters. Unlikely to inhabit Sacramento River

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
Lepidurus packardi	Vernal pool tadpole shrimp	FE/-/-	IUCN_EN-	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water.	Pools commonly found in grass-bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	None	No impact. There is no habitat within or immediately surrounding the footprint based on field surveys.
Linderiella occidentalis	California linderiella	-/-/-	IUCN_NT-	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions.	Water in the pools has very low alkalinity, conductivity, and total dissolved solids.	None	No impact. There is no habitat within or immediately surrounding the footprint based on field surveys.
FISH							
Oncorhynchus tshawytscha	Central Valley spring-run	-/ST/-		Populations in the Sacramento and San Joaquin rivers and their tributaries.		**Moderate**	Less than significant impact. The Proposed Project area is within the known range of this species and there is suitable

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
							migration and foraging habitat for this species in the Proposed Project area.
Oncorhynchus tshawytscha	Sacramento River winter-run	-/SE/-		*Populations in the Sacramento River and its tributaries.*		**Moderate**	Less than significant impact. The Proposed Project area is within the known range of this species and there is suitable migration and foraging habitat for this species in the Proposed Project area.

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
Acipenser medirostris	Green Sturgeon Southern DPS	-/-/-				**Moderate**	Less than significant impact. The Proposed Project area is within the known range of this species and there is suitable migration and foraging habitat for this species in the Proposed Project area.
Hypomesus transpacificus	Delta Smelt	FT/SE/-	AFS_TH-IUCN_EN-	Sacramento-San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait, and San Pablo Bay.	Seldom found at salinities > 10 ppt. Most often at salinities < 2ppt.	**Moderate**	Less than significant impact. The Proposed Project area is within the known range of this species and there is suitable habitat for this species in the

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
							Proposed Project area.
Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	FT/-/-	AFS_TH-	Populations in the Sacramento and San Joaquin rivers and their tributaries.		**Moderate**	Less than significant impact. The Proposed Project area is within the known range of this species and there is suitable migration and foraging habitat for this species in the Proposed Project area.
Pogonichthys macrolepidotus	Sacramento splittail	-/-/-	AFS_VU-CDFW_SSC-IUCN_EN-	Endemic to the lakes and rivers of the Central Valley, but now confined to the Delta, Suisun Bay, and associated marshes.	Slow-moving river sections, dead-end sloughs. Requires flooded vegetation for spawning and foraging for young.	**Moderate**	Less than significant impact. The Proposed Project area is within the known range of this species and there is suitable habitat for this

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
							species in the Proposed Project area.
Spirinchus thaleichthys	Longfin Smelt	-/ST/-		Euryhaline, nektonic & anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column.	Prefer salinities of 15-30 ppt but can be found in completely freshwater to almost pure seawater.	**Moderate**	Less than significant impact. The Proposed Project area is within the known range of this species and there is suitable habitat for this species in the Proposed Project area.

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
AMPHIBIANS							
Ambystoma californiense	California tiger salamander	FT/ST/-	CDFW_WL IUCN_VU-	Central Valley DPS is federally listed as threatened. Santa Barbara and Sonoma counties DPS federally listed as endangered.	Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	None	No impact. Proposed Project footprint in a highly disturbed area; no breeding habitat nearby, closest known occurrence >10mi
Rana draytonii	California red-legged frog	FT/ST/-	CDFW_SSC- IUCN_VU-	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation.	Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	None	No impact. Proposed Project footprint in a highly disturbed area; closest known occurrence >10mi

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
REPTILES							
Emys marmorata	Western pond turtle	-/-/-	BLM_S-CDFW_SSC-IUCN_VU-USFS_S	A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation.	Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	**High**	Less than significant impact. Species observed on site.
Thamnophis gigas	Giant garter snake	FT/ST/-	IUCN_VU-	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches.	This is the most aquatic of the garter snakes in California.	**High**	Less than significant impact. Appropriate habitat, closest known occurrence 1.20 mi away.
BIRDS							
Accipiter cooperii	Cooper's Hawk	-/-/-	CDFW_WL-IUCN_LC-	Woodland, chiefly of open, interrupted, or marginal type.	Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on	**Moderate**	Less than significant impact. Little foraging habitat near Proposed

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
					river floodplains; also, live oaks.		Project footprint, Proposed Project is in highly disturbed levee and parking lot, closest known occurrence is ~ 6mi away.
Agelaius tricolor	Tricolored Blackbird	-/ST/-	BLM_S-CDFW_SSC-IUCN_EN-NABCI_RWL-USFWS_BCC-	Highly colonial species, most numerous in Central Valley & vicinity. Largely endemic to California.	Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	Low	No impact. Habitat in Proposed Project footprint is disturbed, minimal suitable foraging habitat, no suitable breeding habitat
Ammodramus savannarum	Grasshopper Sparrow	-/-/-	CDFW_SSC-IUCN_LC-	Dense grasslands on rolling hills, lowland plains, valleys, and hillsides on lower mountain slopes.	Favors native grasslands with a mix of grasses, forbs, and scattered shrubs. Loosely colonial when nesting.	**Moderate**	Less than significant impact. Suitable grassland habitat adjacent to the Proposed Project footprint. Species

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
							prefers less disturbed habitat.
Ardea alba	Great Egret	-/-/-	CDF_S-IUCN_LC-	Colonial nester in large trees.	Rookery sites are located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	**Moderate**	Less than significant impact. Appropriate habitat nearby.
Ardea herodias	Great Blue Heron	-/-/-	CDF_S-IUCN_LC-	Colonial nester in tall trees, cliffsides, and sequestered spots on marshes.	Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	**Moderate**	Less than significant impact. Appropriate habitat nearby.
Athene cunicularia	Burrowing Owl	-/-/-	BLM_S-CDFW_SSC-IUCN_LC-USFWS_BCC-	Open, dry annual or perennial grasslands, deserts, and scrublands are characterized by low-growing vegetation.	Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Low	No impact. No appropriate foraging habitat, Proposed Project is in highly disturbed levee.

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
Buteo regalis	Ferruginous Hawk	-/-/-	CDFW_WL-IUCN_LC-USFWS_BCC-	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats.	Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	Low	No impact. No suitable foraging habitat nearby, species does not nest in CA.
Buteo swainsoni	Swainson's Hawk	-/ST/-	BLM_S-IUCN_LC-USFWS_BCC-	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, & agricultural or ranch lands with groves or lines of trees.	Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	**Moderate**	Less than significant impact. Suitable nesting habitat in and surrounding Proposed Project footprint.

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	FT/SE/-	BLM_S-NABCI_RWL-USFS_S-USFWS_BCC-	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems.	Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	**Moderate**	Less than significant impact. Appropriate nesting/foraging habitat nearby, occurrences few miles away
Elanus leucurus	White-tailed Kite	-/-/-	BLM_S-CDFW_FP-IUCN_LC-	Rolling foothills and valley margins with scattered oaks & river bottomlands or marshes next to deciduous woodland.	Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**Moderate**	Less than significant impact. Suitable nesting and winter roost habitat near Proposed Project footprint
Falco columbarius	Merlin	-/-/-	CDFW_WL-IUCN_LC-	Seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands & deserts, farms & ranches.	Clumps of trees or windbreaks are required for roosting in open country.	**Moderate**	Less than significant impact. Minimal suitable foraging habitat nearby.

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
Falco peregrinus anatum	American Peregrine Falcon	-/-/-	CDF_S-CDFW_FP-USFWS_BCC-	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures.	Nest consists of a scrape or a depression or ledge in an open site.	**Moderate**	Less than significant impact. No suitable nesting habitat, minimal suitable foraging habitat.
Laterallus jamaicensis coturniculus	California Black Rail	-/ST/-	BLM_S-CDFW_FP-IUCN_NT-NABCI_RWL-USFWS_BCC-	Inhabits freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays.	Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	Low	No impact. Narrow strips of marsh in the Proposed Project area are not suitable for this species.
Melospiza melodia	Song Sparrow ("Modesto" population)	-/-/-	CDFW_SSC-			**Moderate**	Less than significant impact. Appropriate nesting/foraging habitat nearby, occurrences few miles away.

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
Nycticorax nycticorax	Black-crowned Night Heron	-/-/-	IUCN_LC-	Colonial nester, usually in trees, occasionally in tule patches.	Rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, marshy spots.	**Moderate**	Less than significant impact. Appropriate habitat nearby.
Phalacrocorax auritus	Double-crested Cormorant	-/-/-	CDFW_WL-IUCN_LC-	Colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state.	Nests along the coast on sequestered islets, usually on ground with the sloping surface, or in tall trees along lake margins.	**Moderate**	Less than significant impact. Appropriate habitat nearby.
Rallus obsoletus obsoletus	California Ridgway's Rail	FE/SE/-	CDFW_FP-NABCI_RWL-	Saltwater and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay.	Associated with abundant growths of pickleweed but feeds away from cover on invertebrates from mud-bottomed sloughs.	None	No impact. Outside of species' range and no suitable habitat.

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
Sternula antillarum browni	California Least Tern	FE/SE/-	CDFW_FP-NABCI_RWL-	Nests along the coast from San Francisco Bay south to northern Baja California.	Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, landfills, or paved areas.	Low	No impact. All waterways in the Delta are modeled LETE habitat for DCP. A foraging bird could potentially fly by (lots of eBird records by reputable sources at Bufferlands), but in this area the chance is low.
Xanthocephalus xanthocephalus	Yellow-headed Blackbird	-/-/-	CDFW_SSC-IUCN_LC-	Nests in freshwater emergent wetlands with dense vegetation and deep water. Often along borders of lakes or ponds.	Nests only where large insects such as Odonata are abundant, nesting timed with maximum emergence of aquatic insects.	Low	No impact. The footprint is very disturbed. No appropriate foraging habitat adjacent to the Proposed Project area

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
MAMMALS							
Lasiurus blossevillii	Western red bat	-/-/-	CDFW_SSC-IUCN_LC-WBWG_H-	Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests.	Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	**Moderate**	Less than significant impact. Suitable roosting habitat and distance from known occurrences is misleading due to the scarcity of survey data.
Lasiurus cinereus	Hoary bat	-/-/-	IUCN_LC-WBWG_M-	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding.	Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	**Moderate**	Less than significant impact. Moderately suitable roosting and foraging habitat within and adjacent to the Proposed Project.

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
Reithrodontomys raviventris	Salt-marsh harvest mouse	FE/SE/-	CDFW_FP-IUCN_EN-	Only in the saline emergent wetlands of San Francisco Bay and its tributaries.	Pickleweed is primary habitat but may occur in other marsh vegetation types and in adjacent upland areas. Does not burrow; builds loosely organized nests. Requires higher areas for flood escape.	None	No impact. No appropriate habitat, closest occurrence >10 mi away.
Sylvilagus bachmani riparius	Riparian brush rabbit	FE/SE/-		Riparian areas on the San Joaquin River in northern Stanislaus County.	Dense thickets of wild rose, willows, and blackberries.	None	No impact. Out of range for species.
Taxidea taxus	American badger	-/-/-	CDFW_SSC-IUCN_LC-	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	Needs sufficient food, friable soils, and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**High**	Less than significant impact. Appropriate habitat, occurrence in the Proposed Project footprint.

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
COMMUNITIES							
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	-/-/-				None	No impact. No appropriate hydrology.
Great Valley Mixed Riparian Forest	Great Valley Mixed Riparian Forest	-/-/-				**Moderate**	Less than significant impact. Appropriate hydrology and soils, within range.
Great Valley Valley Oak Riparian Forest	Great Valley Valley Oak Riparian Forest	-/-/-				**Moderate**	Less than significant impact. Appropriate hydrology and soils, within range.
Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	-/-/-				None	No impact. No occurrence in the Proposed Project footprint.

Scientific Name	Common Name	Fed/ State/ CNPS	Other Status	General Habitat	Microhabitat	Potential to Occur	Effect Determination
Valley Oak Woodland	Valley Oak Woodland	-/-/-				None	No impact. No occurrence in the Proposed Project footprint

Appendix B. Plant List from Aquatic Resources Delineation

Hood Abandoned Pipes and Conduit Removal Project:

Plant Species Observed Within the Proposed Project Area

(November 19, 2021)

SCIENTIFIC NAME	COMMON NAME	Indicator
ANACARDIACEAE	**SUMAC FAMILY**	
Toxicodendron diversilobum	Poison oak	FACU
APIACEAE	**CARROT FAMILY**	
Foeniculum vulgare	Sweet fennel	N/L
ASTERACEAE	**SUNFLOWER FAMILY**	
Artemisia douglasiana	Mugwort	FAC
Erigeron bonariensis	South American horseweed	FACU
Silybum marianum	Milk thistle	N/L
Sonchus oleraceus	Common sowthistle	UPL
AZOLLACEAE	**MOSQUITO FERN FAMILY**	
Azolla filiculoides	Mosquito fern	OBL
BRASSICACEAE	**MUSTARD FAMILY**	
Brassica nigra	Black mustard	N/L
Raphanus sativus	Purple wild radish	N/L
CYPERACEAE	**SEDGE FAMILY**	
Cyperus eragrostis	Tall flatsedge	FACW
EQUISETACEAE	**HORSETAIL FAMILY**	
Equisetum hyemale	Rough horsetail	FACW
FABACEAE	**LEGUME FAMILY**	
Lathyrus jepsonii var. *californicus*	California tule pea	OBL
Robinia pseudoacacia	Black locust	FACU
Vicia sativa	Common vetch	FACU
FAGACEAE	**OAK FAMILY**	
Quercus lobata	Valley oak	FACU
Quercus wislizeni	Interior live oak	N/L
GERANIACEAE	**GERANIUM FAMILY**	
Erodium moschatum	Filaree	N/L
Geranium dissectum	Cut-leaved geranium	N/L
JUGLANDACEAE	**WALNUT FAMILY**	
Juglans hindsii	Northern California black walnut	FAC
JUNCACEAE	**RUSH FAMILY**	
Juncus tenuis	Poverty rush	FACW

SCIENTIFIC NAME	COMMON NAME	Indicator
OLEACEAE	**OLIVE FAMILY**	
Fraxinus latifolia	Oregon ash	FACW
ONAGRACEAE	**EVENING PRIMROSE FAMILY**	
Epilobium brachycarpum	Panicled willow-herb	FAC
Ludwigia sp.	Water primrose	OBL
PLATANACEAE	**PLANE-TREE FAMILY**	
Platanus racemosa	California sycamore	FAC
POACEAE	**GRASS FAMILY**	
Avena barbata	Slender wild oat	N/L
Bromus diandrus	Ripgut brome	N/L
Cynodon dactylon	Bermuda grass	FACU
Paspalum dilatatum	Dallis grass	FAC
Setaria sp.	Bristlegrass	FAC
Stipa miliacea var. *miliacea*	Smilo grass	N/L
PONTEDERIACEAE	**PICKEREL-WEED FAMILY**	
Eichhornia crassipes	Water hyacinth	OBL
PORTULACEAE	**PURSLANE FAMILY**	
Claytonia perfoliata	Miner's lettuce	FAC
ROSACEAE	**ROSE FAMILY**	
Rubus armeniacus	Himalayan blackberry	FAC
Rubus leucodermis	White-stemmed raspberry	FACU
RUBIACEAE	**MADDER FAMILY**	
Cephalanthus occidentalis	Common buttonbush	OBL
Galium aparine	Goose grass	FACU
SOLANACEAE	**NIGHTSHADE FAMILY**	
Nicotiana glauca	Tree tobacco	FAC
VITACEAE	**GRAPE FAMILY**	
Vitis californica	California wild grape	FACU

Appendix C. Tribal Consultation

Appendix D. Air Quality and Greenhouse Gas (GHG) Emission Analyses

Hood Facility - Inventory and Calculation of Greenhouse Gas Emissions

Emissions from Construction Equipment

Type of Equipment	Maximum Number per Day	Total Operation Days	Total Operation Hours[1]	Fuel Consumption Per Hour[2]	Total Fuel Consumption (gallons of diesel)	CO_2e/gal Diesel[3]	Total CO_2 Equivalent Emissions (metric tons)
Low-boy tractor trailer (eqmt line 202)	1	7	56	11.51	645	0.010	6.70
Medium excavator (excavation) (eqmt line 121)	1	10	80	5.12	410	0.010	4.26
Off-haul dump truck (eqmt line 145)	4	40	1280	7.55	9,664	0.010	100.42
Small Skid-steer loader (eqmt line 58)	1	10	20	1.11	22	0.010	0
Medium loader (eqmt line 178)	1	10	80	7.78	622	0.010	6
Medium excavator (fill) (eqmt line 121)	1	30	120	5.12	614	0.010	6
Medium roller (eqmt line 76)	1	30	120	2.71	325	0.010	3
Small plate compactor (eqmt line 11)	1	30	60	0.18	11	0.010	0

Type of Equipment	Maximum Number per Day	Total Operation Days	Total Operation Hours[1]	Fuel Consumption Per Hour[2]	Total Fuel Consumption (gallons of diesel)	CO_2e/gal Diesel[3]	Total CO_2 Equivalent Emissions (metric tons)
Crawler crane (eqmt line 133)	1	2	16	3.67	59	0.010	1
Vibratory pile extractor (eqmt line 202)	1	2	16	11.51	184	0.010	2
Water truck (eqmt line 241)	1	40	320	7.19	2,301	0.010	24
Tugboat (eqmt line 148)	2	9	144	28.37	4,085	0.010	42
			0		-	0.010	-
			0		-	0.010	-
			0		-	0.010	-
			0		-	0.010	-
			0		-	0.010	-
			0		-	0.010	-
			0		-	0.010	-
			0		-	0.010	-
			0		-	0.010	-
			0		-	0.010	-
			0		-	0.010	-
TOTAL					18,942		197

Table notes: [1] An eight-hour workday is assumed. Some equipment not used for all eight hours, see Key Assumptions for details.

[2] California Air Resource Board Offroad 2007 Emissions Inventory fuel consumption factors.

[3] World Resources Institute-Mobile combustion CO emissions tool, June 2003 Version 1.2.

Emissions from Transportation of Construction Workforce

Average Number of Workers per Day	Total Number of Workdays	Average Distance Travelled (round trip)	Total Miles Travelled	Average Passenger Vehicle Fuel Efficiency[4]	Total Fuel Consumption (gallons of gasoline)	CO_2e/gal Gasoline[3]	Total CO_2 Equivalent Emissions (metric tons)
7	49	50	17150	20.8	824.5	0.009	7

Table notes: [3] World Resources Institute-Mobile combustion CO emissions tool, June 2003 Version 1.2.
[4]United States Environmental Protection Agency. 2008. Light-Duty Automotive Technology and Fuel Economy Trends: 1975 through 2008. [EPA420-R-08-015].

Emissions from Transportation of Construction Materials

Trip Type	Total Number of Trips	Average Trip Distance	Total Miles Travelled	Average Semi- truck Fuel Efficiency	Total Fuel Consumption (gallons of diesel)	CO_2e/gal Diesel[3]	Total CO_2 Equivalent Emissions (metric tons)
Delivery	215	50	10750	6	1791.666667	0.010	18.617882
Spoils	245	50	12250	6	2041.666667	0.010	21.215726
TOTAL							39.833608

Construction Electricity Emissions

MWh of Electricity	$mtCO_2e$/MWh[5]	CO_2e emissions
0	0.277	0

[5] eGRID2010 Version 1.0 CAMX-WECC sub-region.

Project Totals

Total construction emissions from construction equipment, transportation of construction workforce, transportation of construction materials, and electricity: 244.1 $mtCO_2$ equivalents

Total years of construction: 1

Expected start date of construction: August 22, 2022

Estimated project useful life: 1 year

Average Annual Total GHG Emission (short-term construction emissions amortized over life of project):
244.09722 $mtCO_2$ equivalents.

Max. Year Construction GHG Emissions (total from single year of construction when emissions peak [for multi-year construction projects]):
244.09722 mtCO2 equivalents.

NOTE: The average annual total GHG emissions is not the same value as the maximum annual emissions (MAE) value that is required on the DWR GGERP Consistency Form for Projects Using Outside Labor and Equipment. The MAE is calculated to ensure that the project does not emit more than 12,500 $mtCO_2e$ in any given year.

DWR GHG EMISSIONS REDUCTION PLAN CONSISTENCY DETERMINATION FORM: EXPLANATION OF EXCLUDED PROJECT LEVEL GHG EMISSIONS REDUCTION MEASURES

The California Department of Water Resources (DWR) Greenhouse Gas (GHG) Emissions Reduction Plan Consistency Determination Form required that all feasible Project Level GHG Emissions Reduction Measures are incorporated into the design or implementation plan for the project. All measures not incorporated must be listed with an explanation as to why the measures were excluded from the project plan.

The following Pre-Construction and Final Design and Construction BMPs are not included in the Hood Abandoned Pipes Phase 3 for the following reasons:

- **BMP 4.** Evaluate the feasibility and efficacy of producing concrete on-site and specify that batch plants be set up on-site or as close to the site as possible.
    - The Proposed Project does not include the use of concrete.

- **BMP 5.** Evaluate the performance requirements for concrete used on the project and specify concrete mix designs that minimize GHG emissions from cement production and curing while preserving all required performance characteristics.
    - The Proposed Project does not include the use of concrete or cement.

- **BMP 13.** Minimize the amount of cement in concrete by specifying higher levels of cementitious material alternatives, larger aggregate, longer final set times, or lower maximum strength where appropriate.
    - The Proposed Project does not include the use of concrete or cement.