Draft
Initial Study/Mitigated Negative Declaration for the Reclamation District 108 Slope Stability Flood System Repair Program Sites Project

Colusa and Yolo Counties, California

Prepared For:

Reclamation District 108
975 Wilson Bend Road
Grimes, California 95950

Prepared By:

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December 2024

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DRAFT INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Lead Agency: Reclamation District No. 108

Project Proponent: Reclamation District No. 108

Project Location: Two segments within the Colusa Basin Drainage Canal East Levee, one a 150-foot-long segment between Yolo County Line Road and White Road, and the other a 640-foot-long segment between White Road and Tule Road in Colusa County, California.

Project Summary: Reclamation District 108 Slope Stability Flood System Repair Program (FSRP) Sites Project (Project) is intended to repair two critical levee slip sites. The landside levee slopes in two locations have slipped causing deformation of the levee crowns and landside slopes. The Project is being performed to limit the potential risk of additional levee damage or failure. The slope stability repairs along two segments of the Colusa Basin Drainage Canal East Levee is a 150-foot-long segment between Yolo County Line Road and White Road, and a 640-foot-long segment between White Road and Tule Road. The Project also proposes to use a *Spoils Area* for depositing excess excavated material; this area is located in Yolo County between County Road 108 and State Route 45.

Public Review Period: December 13, 2024 through January 13, 2025

Mitigation Measures Incorporated into the Project to Avoid Significant Effects:

Biological Resources

BIO-1: Special-Status Plant Species

- Where feasible, Project-related activities shall be restricted to previously developed or disturbed areas to avoid disturbance of habitats that may support special-status plants.
- A special-status plant survey was conducted for the Project according to CDFW, CNPS, and USFWS protocols, and no special-status plant species were observed during the survey.
- However, if unanticipated special-status plants are identified onsite, the Project shall be modified to the extent feasible to prevent disturbance or loss of special-status plants. No-disturbance buffers shall be established around sensitive plant populations to be preserved in or adjacent to the Project Area. A 25-foot buffer should be maintained between project activities and sensitive plant populations, unless otherwise determined by a qualified biologist. Buffer distances may vary between species depending on listing status, rarity, and other factors. Buffer areas will be clearly demarcated in the field, and no construction or ground-disturbing activities will occur within the boundaries of the delineated area.

- If a special-status plant species is found and avoidance is not feasible, additional measures may be developed in consultation with CDFW, USFWS and/or the CEQA Lead Agency.
- If a state or federally listed threatened or endangered plant or a plant that is a candidate for state listing is found onsite, the applicant shall consult with CDFW and/or USFWS, as applicable, to determine appropriate avoidance and minimization measures. If the plants cannot be avoided, an incidental take permit and compensatory mitigation may be required.

BIO-2: Northwestern Pond Turtle

- If northwestern pond turtle becomes listed as threatened pursuant to the federal ESA prior to or during the course of construction and Project activities have the potential for "take" of an individual or nest, then the Project proponent will initiate Section 7 consultation with the USFWS and obtain a Biological Opinion. The Project will implement the measures within the Biological Opinion.
- A qualified biologist will conduct a preconstruction survey for northwestern pond turtle two weeks prior to and 48 hours before commencement of ground-disturbing activities within 160 feet of aquatic habitat and prior to in-water work activities. The surveys will be timed to coincide with the time of day when turtles are most likely to be active and visible (during the cooler portion of the day, 8:00 a.m. to 12:00 p.m. during spring, summer, and late summer). Prior to conducting presence/absence surveys, the biologist will locate the microhabitats for turtle basking (i.e., logs, rocks, brush thickets) and determine a location to quietly observe turtles. Each survey will include a wait time after arriving onsite to allow startled turtles to return to open basking areas and an observation period. If northwestern pond turtle is observed, a northwestern pond turtle management, monitoring, and relocation plan will be prepared prior to commencement of construction in suitable habitat.
- Implementation of the giant garter snake exclusion recommended measures would contribute to avoiding and minimizing potential impacts to northwestern pond turtles. A qualified biologist will include northwestern pond turtle in their exclusion fence clearance surveys.
- If a northwestern pond turtle is observed during construction activities, the construction activities will be temporarily halted to allow a qualified biologist the opportunity to hand capture the individual and relocate them to suitable aquatic habitat that will not be disturbed by the Project. The relocation effort and location will be documented in a report and submitted to CDFW and a CNDDB report will be completed within 60 days of the observation to document the occurrence. If northwestern pond turtle eggs are unearthed, construction activities will be halted within 50 feet of the observation, a light soil layer will immediately be placed over the eggs, and CDFW will immediately be consulted on how to proceed with a nest relocation or transportation to wildlife rehabilitation center.

BIO-3: Giant Garter Snake

- Consult with USFWS and CDFW and if necessary, obtain a USFWS Biological Opinion and an Incidental Take Permit 2081, pursuant to Section 2080 of the California Fish and Game Code, or Consistency Determination.
- A giant garter snake handling and relocation plan outlining appropriate procedures for these activities will be prepared for the Project and provided to USFWS and CDFW (the Agencies) for review and approval prior to commencement of construction. The generalized content is anticipated to include conditions under which the biologist may order work stop and re-start; approved monitoring equipment and processing procedures, and procedures for treating an injured animal, including approved veterinary treatment facilities and their location.
- In addition to the mitigation measures listed herein, if compensatory mitigation is required as a result of Project impacts, it will be purchased for the permanent impacts to giant garter snake habitat if permanent impacts are proposed, as identified in the Biological Assessment report and agreeable to the Agencies. The mitigation credits will be purchased from a CDFW and USFWS approved mitigation bank. The transaction will take place through a purchase and sale agreement, and funds must be transferred within 30 days, and prior to the initiation of any construction activities that would result in direct impacts to giant garter snake.
- Prior to initiation of ground disturbing work, the District will submit to the Agencies for approval the name and resume of an individual who will act as the Designated Biologist. The Designated Biologist shall be responsible for monitoring construction activities for compliance with measures to minimize and fully mitigate or avoid the incidental take of GGS and its associated habitat. Resumes for all biological staff who will be acting as biological monitors will also be submitted to the agencies for approval.
- Construction activities will be conducted between May 1 and October 1, if possible, when direct mortality will be lessened because the snakes can move to avoid danger. If work is not able to occur during the active season, the areas scheduled for ground disturbance/fill will be excluded with silt fence containing one-way exits for at least two weeks prior to the inactive season, to reduce the likelihood of individuals wintering within the area.
- If required by the Agencies, prior to ground disturbing activities, giant garter snake exclusion fencing will be installed around the work area. If exclusion fencing is installed, it will be installed during the giant garter snake active period between May 1st and October 1st. The exclusion fencing shall be installed under the supervision of a qualified biologist to ensure the fencing is installed in a manner that excludes giant garter snake from the work area. The biologist will conduct weekly fence and environmental compliance checks and immediately report any deficiencies to the superintendent.

- Twenty-four hours prior to the commencement of construction activities, the Project Area shall be surveyed by a biologist approved by the agencies to document the presence or absence of GGS. The biologist will provide the Agencies with a written report that adequately documents the preconstruction survey. If giant garter snake is observed during the preconstruction survey, the report will be provided to the Agencies within 24-hours of commencement of construction activities. The Project will be re-inspected by the monitoring biologist whenever a lapse of two weeks or greater has occurred.
- Construction personnel will participate in a Worker Environmental Awareness Training program prior to the initiation of construction activities. The training will educate all workers and site personnel about identification of GGS and appropriate actions to be taken in the event giant garter snake are observed during construction. Under this training, information regarding the life history of giant garter snake identification of aquatic and upland GGS habitat within the Project Area, a description of activities that qualify as take of the species including harassment, destruction of habitat, and death of an individual.
- During construction operations, excavation will be accomplished by equipment located and operated outside of the aquatic resources as much as feasible. Stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and all operations will be confined to the minimal area necessary. All Project related vehicles will observe a 20-mile-per-hour speed limit within construction areas, except on existing paved roads where they will adhere to the posted speed limit. All construction related holes will be covered to prevent entrapment of individuals. All Project personnel shall look beneath parked vehicles and construction equipment for snakes prior to their movement.
- If required by the Agencies, a qualified biologist will conduct daily visual surveys of the work area within GGS aquatic or upland habitat prior to any earthmoving activities to verify there are no GGS in the area.
- If giant garter snake is encountered, the applicant or its consultant shall halt construction until the snake has left the area under its own volition and notify the Agencies immediately to determine the appropriate procedures related to the collection or relocation of the snake. A report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the snake, within one business day. The biologist will be required to report any take of listed species to the Agencies immediately by telephone and written letter or email within one day of the incident.
- Standard construction Best Management Practices (BMPs) will be implemented to minimize potential for erosion and sedimentation. BMP materials shall not contain monofilament and or have fused joints that provide an entanglement risk to wildlife.

Temporarily disturbed habitat will be revegetated with a RD 108 approved seed mix at the completion of construction.

- If GGS is encountered, a CNDDB report will be completed within 60 days of the encounter.
- After completion of construction activities, the applicant will remove any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Restoration work includes such activities as revegetating the banks of the ditches with RD 108 approved seed mix.
- If work must occur during the giant garter snake inactive period (i.e., between October 2 and April 30), when snakes are more vulnerable to injury or mortality, the following additional protective measures will be implemented, if required by the Agencies.
    - Areas of suitable habitat that are scheduled for excavation or ground disturbance/fill will be excluded with giant garter snake exclusion fencing with one-way exits for at least two weeks prior to the inactive season (or the drop off in warm temperatures), to reduce the likelihood of brumation by individuals within the area.
    - An Agency approved monitoring biologist will conduct on-site daily monitoring for the duration of any ground-disturbing activities (e.g., grading, or other earth-moving activities) after October 1.
    - All vegetation within 200 feet of aquatic habitat will be cleared prior to the giant garter snake inactive season (i.e., vegetation clearing will be completed by October 1 for work the following winter).

BIO-4: Nesting Birds Preconstruction Survey

- A qualified biologist shall conduct a preconstruction survey for nesting raptors, within the Project Area and a 500-foot buffer, within 14 days of commencement of Project activities (can be conducted concurrently with nesting bird surveys, as appropriate). If an active nest is located, a no-disturbance buffer will be established as determined by the biologist and maintained until a qualified biologist determines the young have fledged and are no longer reliant upon the nest for survival.
- A qualified biologist shall conduct a preconstruction nesting bird (non-raptor) survey (can be conducted concurrently with raptor surveys, as appropriate) of all areas associated with construction activities, and a 100-foot buffer around these areas, within 14 days prior to commencement of construction. If active nests are found, a no-disturbance buffer around the nest shall be established. The buffer distance shall be established by a qualified biologist. The buffer shall be maintained until the fledglings are capable of flight and become independent of the nest, to be determined by a qualified biologist. Once the young are independent of the nest, no further measures are necessary.

BIO-5: **Swainson's Hawk Preconstruction Survey.** If Project activities are scheduled during the Swainson's hawk nesting season (March 1 to August 31), then prior to beginning work on the Project, a qualified biologist shall survey for Swainson's hawk nesting activity. The survey area shall include a 0.25-mile distance surrounding the Project Area. The qualified biologist shall conduct surveys according to the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (ECORP 2024b) or, if proposing an alternate survey methodology, shall submit the proposed survey timing and methods to CDFW for review and written approval prior to initiation of surveys. Survey results shall be submitted to CDFW for review. If Swainson's hawk nesting activity is observed during the survey, then the survey results shall be submitted to CDFW for review and acceptance prior to starting Project activities. If the qualified biologist identifies nesting Swainson's hawks, then they shall recommend a no disturbance buffer, and the contractor shall implement the buffer under the supervision of a qualified biologist. Project activities shall be prohibited within the no disturbance buffer between March 1 to August 31, unless otherwise approved in writing by CDFW, which may include consultation pursuant to California ESA and an Incidental Take Permit, or a qualified biologist determining that the nest is no longer active. If there is a lapse in Project-related work of 14 days or longer, then an additional survey shall be conducted prior to resuming Project activities.

BIO-6: **Burrowing Owl Preconstruction Survey.** A preconstruction survey for nesting burrowing owl will be conducted by a qualified biologist within 14 days prior to commencement of Project activities within the Biological Study Area (BSA) and a 250-foot buffer. Surveys shall be conducted at appropriate times and in appropriate weather conditions to maximize detection. If active burrowing owl burrows are found, an avoidance buffer will be immediately established, and an avoidance plan will be prepared in consultation with CDFW prior to the commencement of any ground-disturbing activities.

BIO-7: **Pallid Bat**

- A qualified bat biologist will conduct a bat habitat assessment for suitable bat roosting habitat prior to any construction activities. The habitat assessment should be conducted one year prior to the initiation of construction activities, if feasible, and no less than 30 days prior to the initiation of construction activities. If no suitable roosting habitat is identified, no further measures are necessary. If suitable roosting habitat and/or signs of bat use are identified during the assessment, the roosting habitat should be avoided to the extent possible.
- If avoidance of the identified bat roosting habitat is not feasible, then a qualified bat biologist will conduct an emergence and/or preconstruction survey for roosting bats. Emergence surveys shall not be conducted during the bat inactive/hibernation period (typically October 15 through March 1, or when nighttime low temperatures are 45 degrees Fahrenheit or lower and rain is not over ½ inch in 24 hours), as bats are not detectable using emergence survey methods during their inactive period. If a maternity roost is located, an avoidance buffer will be established in consultation

with CDFW until after the maternity season or until a qualified biologist has determined the roost is no longer active.

BIO-8: Western Red Bat

- If a qualified bat biologist identified trees or shrubs within the Project Area that may provide suitable day-roosting habitat for western red bat, the roosting habitat should be avoided to the extent possible.
- If avoidance of the identified bat roosting habitat is not feasible, then a qualified bat biologist will conduct an emergence and/or preconstruction survey for roosting bats. Emergence surveys shall not be conducted during the bat inactive/hibernation period (typically October 15 through March 1, or when nighttime low temperatures are 45 degrees Fahrenheit or lower and rain is not over ½ inch in 24 hours), as bats are not detectable using emergence survey methods during their inactive period. If a maternity roost is located, an avoidance buffer will be established in consultation with CDFW until after the maternity season or until a qualified biologist has determined the roost is no longer active.

BIO-9: Aquatic Resources

- A permit authorization to fill wetlands under the Section 404 of the federal Clean Water Act (Section 404 Permit) must be obtained from USACE prior to discharging any dredged or fill materials into any waters of the U.S. Final mitigation measures will be developed as part of the Section 404 Permit process to ensure no-net-loss of wetland function and values.
- A permit authorization from the RWQCB pursuant to Section 401 of the Clean Water Act and the California Porter-Cologne Water Quality Act must be obtained prior to the discharge of material in an area that could affect waters of the U.S./state. Mitigation requirements for discharge to waters of the U.S./state will be developed in consultation with the RWQCB.

BIO-10: Great Blue Heron

- In order to avoid potential impacts to the rookeries, Project activities should work outside the breeding season for great blue heron (February-July). If avoidance is unfeasible, a no-disturbance buffer should be established around the rookeries sites, and CDFW and USFWS should be consulted about implementing appropriate avoidance and minimization measures.
- A monitoring and management plan should be developed in consultation with CDFW, to determine if additional mitigation measures are required.

Cultural Resources

CUL-1: **Unanticipated or Post Review Discovery of Cultural Resources.** If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, the archaeologist shall immediately notify the lead agencies. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined by CEQA or a historic property under Section 106 NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not a Historical Resource under CEQA or a Historic Property under Section 106; or 2) that the treatment measures have been completed to their satisfaction.
- If the find includes human remains, or remains that are potentially human, they shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Colusa County Coroner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California PRC, and AB 2641 will be implemented. If the coroner determines the remains are Native American and not the result of a crime scene, the coroner will notify the NAHC, which then will designate a Native American Most Likely Descendant (MLD) for the Project (§ 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

Geology and Soils

GEO-1: **Discovery of Unanticipated Paleontological Resources.** If paleontological or other geologically sensitive resources are identified during any phase of Project development, the construction manager shall cease operation at the site of the discovery and immediately notify RD 108. RD 108 shall retain a qualified paleontologist to provide an evaluation of the find and to prescribe mitigation measures to reduce impacts to a less-than-significant level. In considering any suggested mitigation proposed by the consulting paleontologist, the RD 108 shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, Project design, costs, land use assumptions, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the Project Site while mitigation for paleontological resources is carried out.

Hazards and Hazardous Materials

HAZ-1: **Hazardous Materials Management.** Vehicles shall be moved away from the Colusa Basin Drainage Canal and any waters of the U.S. or state prior to refueling and lubrication, as well as repairs if feasible. Staging and storage areas for equipment, materials, fuels, lubricants, and solvents shall be located away from the top of bank and riparian areas. Stationary equipment, such as motors, pumps, generators, compressors and welders, located within or adjacent to waters of the state shall be positioned over drip-pans. Debris, rubbish, oil, gasoline or diesel fuel, or other petroleum products, or any other substances which could be hazardous to aquatic life resulting from Project activities shall be prevented from contaminating the soil and/or entering waters of the state. Absorbent materials designated for spill containment shall be used for all activities performed in or within 50 feet of a watercourse that involve use of hazardous materials to be used for spill response and cleanup in the event of an accidental spill.

Transportation

TRANS-1: **Construction Traffic Management Plan.** If any lane closures are required as part of the Project, the construction contractor shall prepare and implement a Construction Traffic Management Plan to manage and plan for any lane closures or detours for roadways or bicycle facilities, and ingress and egress of truck traffic and deliveries of equipment and supplies at the Project access points in Colusa and Yolo Counties. The Construction Traffic Management Plan shall include proposed times and days of deliveries and material hauling to avoid peak hours to the maximum extent feasible.

Tribal Cultural Resources

TCR-1: **Tribal Cultural Resources - Cultural Awareness Training.** The following mitigation measure is intended to address the cultural sensitivity of the project area by including a Worker Environmental Awareness Program for relevant project personnel and construction workers.

- The lead agency shall require the applicant/Contractor to provide a tribal cultural resources sensitivity and awareness training program (Worker Environmental Awareness Program [WEAP]) for all personnel involved in project construction, including field consultants and construction workers, at their own expense. The WEAP shall be developed in coordination with interested Native American Tribes.
- The WEAP shall be conducted before any project-related construction activities begin at the project site. The WEAP will include relevant information regarding sensitive cultural resources and tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The WEAP will also describe appropriate avoidance and impact minimization measures for cultural resources and tribal cultural resources that could be located at the project site and will outline what to do and who to contact if any potential cultural resources or tribal cultural resources are encountered. The WEAP will emphasize the requirement for confidentiality and culturally appropriate treatment of any discovery of significance to Native Americans and will discuss appropriate behaviors and responsive actions, consistent with Native American tribal values. The training may be done in coordination with the project archaeologist.
- All ground-disturbing equipment operators shall be required to receive the training and sign a form that acknowledges receipt of the training.

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LIST OF ACRONYMS AND ABBREVIATIONS

Term	Definition
AB	Assembly Bill
ANSI	American National Standards Institute
APE	Area of Potential Effect
AQAP	2021 Air Quality Attainment Plan
BCC	USFWS Bird of Conservation Concern
BMP	Best Management Practice
BP	Years before present
BRA	Biological Resource Assessment
BSA	Biological Study Area
CAISO	California Independent Service Operator
CalEEMod	California Emissions Estimator Model
CAL FIRE	California Department of Forestry and Fire Protection
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation

Term	Definition
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Building Code
CBDC	Colusa Basin Drainage Canal
CCAPCD	Colusa County Air Pollution Control District (
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	Methane
CIWMP	County Integrated Waste Management Plan
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CWA	Clean Water Act
dB	Decibels
dBA	A-weighted decibels
DDT	Dichlorodiphenyltrichloroethane
DOC	California Department of Conservation
DPM	Diesel particulate matter
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
E-A	Exclusive Agriculture
ECORP	ECORP Consulting, Inc.
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
ESA	Endangered Species Act
ESU	Evolutionary Significant Unit
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map

Term	Definition
FSRP	Flood System Repair Program
FTA	Federal Transit Administration
GGS	Giant gartersnake
GHG	Greenhouse gas
HCP	Habitat Conservation Plan
IRWM	Integrated Regional Water Management
IRWMP	Integrated Regional Water Management Plan
IS	Initial Study
KSN	Kjeldsen, Sinnock, Neudeck, Inc.
L_{dn}	Day/Night Average
L_{eq}	Equivalent Noise Level
LESA	Land Evaluation and Site Assessment
LOS	Level of Service
LSA	Lake and Streambed Alteration
LSAA	Lake and Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendant
MLRA	Major Land Resource Area
MND	Mitigated Negative Declaration
MRDS	Mineral Resource Data System
MRZ	Mineral Resource Zone
MSL	Mean Sea Level
MTP	Metropolitan Transportation Plan
N/A	Not Applicable
N_2O	nitrous oxide
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NIOSH	National Institute for Occupational Safety and Health
NMFS	National Marine Fisheries Service
NO_x	Nitric oxides
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSVAB	Northern Sacramento Valley Air Basin
NTR	National Toxics Rule
NWPT	Northwest pond turtle
O_3	Ozone
OHWM	Ordinary High Water Mark
PG&E	Pacific Gas and Electric Company
PM	Post Mile

Term	Definition
PM_{10}	Particulate matter less than 10 microns in diameter
$PM_{2.5}$	Particulate matter less than 2.5 microns in diameter
PPV	Peak particle velocity
PRC	Public Resources Code
RCRA	Resource Conservation and Recovery Act
RD	Reclamation District
ROG	Reactive Organic Gases
RPS	Renewable Portfolio Standards
RWQCB	Regional Water Quality Control Board
SACOG	Sacramento Area Council of Governments
SB	Senate Bill
SCS	Sustainable Communities Strategy
SIP	State Implementation Plan
SMARA	Surface Mining and Reclamation Act
SO_2	Sulfur dioxide
SR	State Route
SRA	State Responsibility Area
SRRE	Source Reduction and Recycling Elements
SSC	California Species of Special Concern
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic air contaminant
TCR	Tribal cultural resource
TMDL	Total maximum daily load
UAIC	United Auburn Indian Community
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VMT	Vehicle Miles Traveled
WEAP	Worker Environmental Awareness Program
YDWN	Yocha Dehe Wintun Nation

1.0 BACKGROUND

1.1 Summary

Project Title:	Reclamation District 108 Slope Stability Flood System Repair Program (FSRP) Sites Project
Lead Agency Name and Address:	Reclamation District No. 108 975 Wilson Bend Road Grimes, California 95950
Contact Person and Phone Number:	Meegan Nagy, Deputy Manager 530-812-6269
Project Location:	Two segments within the Colusa Basin Drainage Canal East Levee, one a 150-foot-long segment between Yolo County Line Road and White Road, and the other a 640-foot-long segment between White Road and Tule Road in Colusa County, California
General Plan Designation:	Site A: Agriculture (AG) Site B: Agriculture (AG) Spoils Location: Agriculture (AG)
Zoning:	Site A: Exclusive Agriculture (E-A) Site B: Exclusive Agriculture (E-A) Spoils Location: Agriculture Intensive (A-N)

1.2 Introduction

Reclamation District 108 (RD 108) is the lead agency for this Initial Study/Mitigated Negative Declaration (IS/MND) under the California Environmental Quality Act (CEQA). This IS/MND has been prepared to identify and assess the anticipated environmental impacts of the Stability FSRP Sites Project (Project). This document has been prepared to satisfy CEQA (Pub. Res. Code, Section 21000 et seq.) and state CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.). CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects. A CEQA Initial Study is generally used to determine which CEQA document is appropriate for a Project (Negative Declaration, MND, or Environmental Impact Report [EIR].

The Project proposes to conduct repairs along two segments of the Colusa Basin Drainage Canal (CBDC) East Levee: a 150-foot-long segment between Yolo County Line Road and White Road, and a 640-foot-long segment between White Road and Tule Road. The Project also proposes to use a Spoils Area for

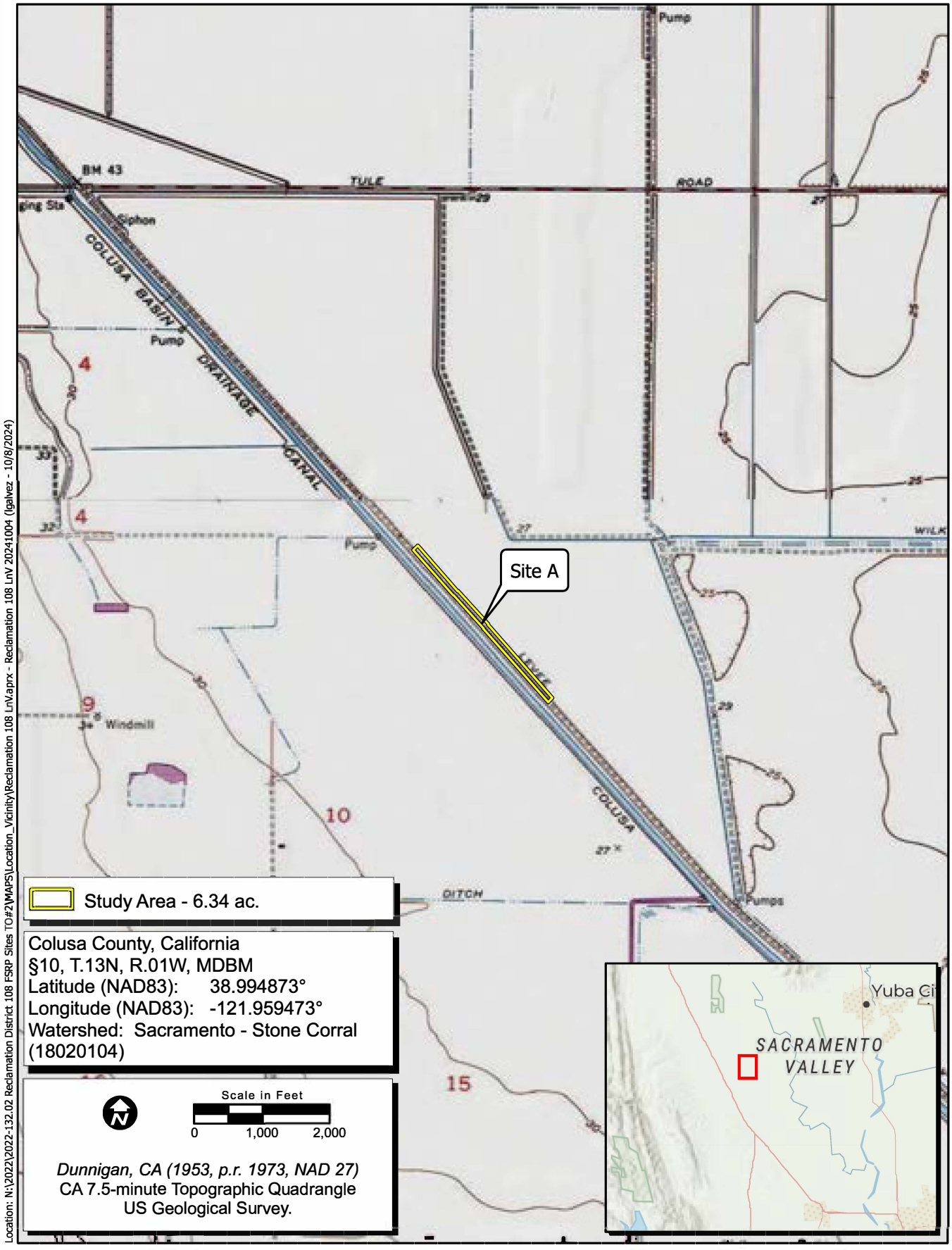
depositing excess excavated material; this area is located in Yolo County between County Road 108 and State Route 45.

1.3 Surrounding Land Uses/Environmental Setting

The Colusa Basin Drainage Canal (also known as "2047 Canal") is a 70-mile earthen channel constructed in the 1920s to convey water supply from the Glenn-Colusa Canal south from the Colusa National Wildlife Refuge area to farms and ranches in southern Colusa County and northern Yolo County. It also conveys agricultural drainage and stormwater flows from the same area into the Sacramento River (through the Knights Landing Outfall Gates), and the Yolo Bypass (through the Wallace Weir). It is also slated to connect to the Tehama Colusa Canal through a new 30-mile pipeline as part of the planned Sites Reservoir system, which would connect to the CBDC approximately 4 miles south of the Colusa/Yolo County border.

The Project proposes to conduct repairs along two segments of the Colusa Basin Drainage Canal East Levee: a 640-foot-long segment between Tule Road and White Road at Levee Mile 17.2 (Site A), and a 150-foot-long segment between Yolo County Line Road and White Road at Levee Mile 12.7 (Site B). The Project also proposes to use an optional *spoils area* for depositing excess excavated material (Spoils Area); this area is located in Yolo County between County Road 108 and State Route (SR) 45. The Project is composed of three separate sites that cumulatively total approximately 16.34 acres (Figure 1-1).

The District maintains the Project area annually for vegetation management and fire risk abatement. Surrounding land uses are primarily rice cultivation and other forms of intensive agriculture. The majority of the Project area is composed of annual, non-native grass species that are prevalent throughout the region.



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Map Date: 11/13/2024
Sources: ESRI, USGS

Figure 1-1. Project Location and Vicinity

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

2022-132.02 Reclamation District 108 FSRP Sites TO#2

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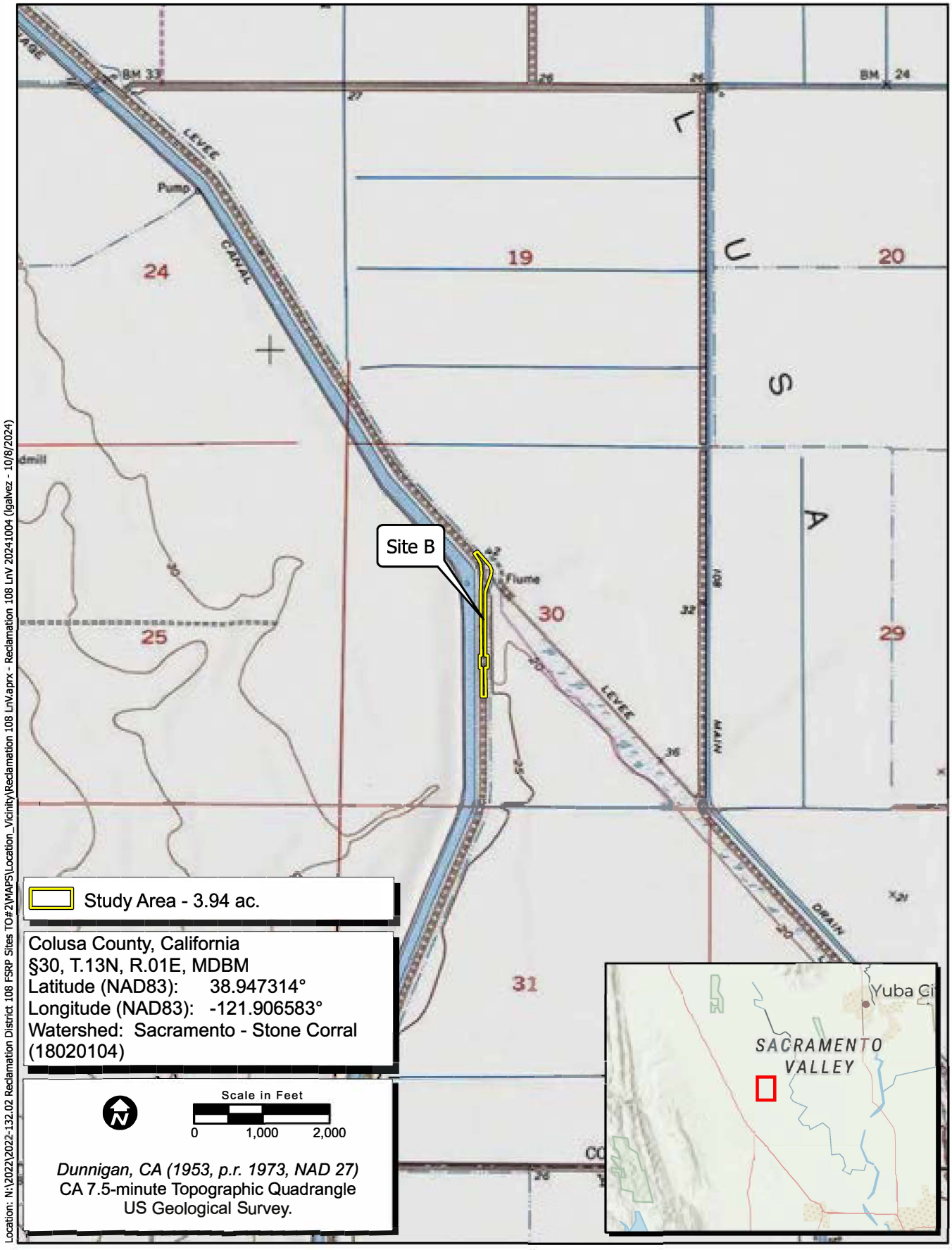

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Map Date: 11/13/2024
Sources: ESRI, USGS

Figure 1-1. Project Location and Vicinity

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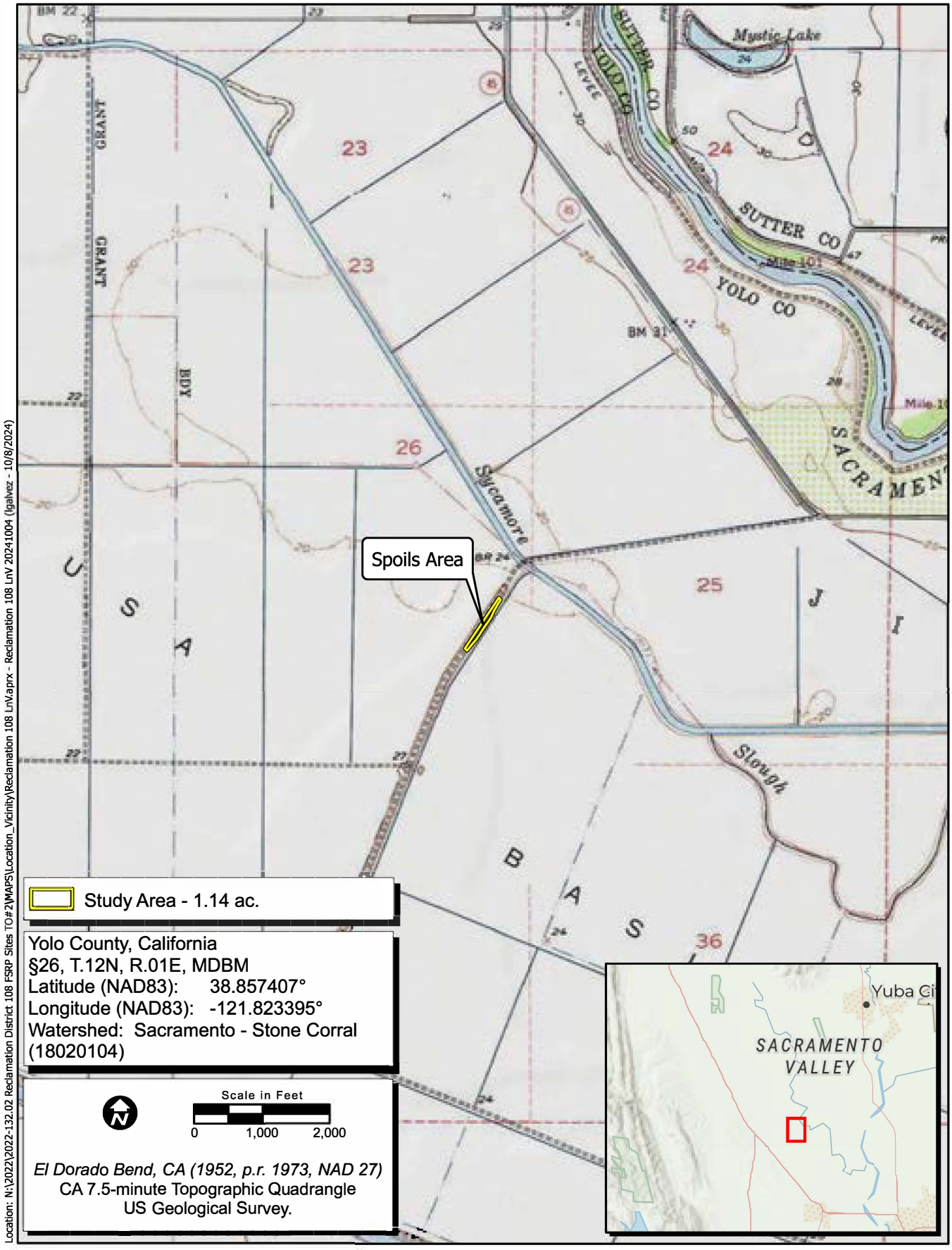

Map Date: 11/13/2024
Sources: ESRI, USGS

Figure 1-1. Project Location and Vicinity

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2022-132.02 Reclamation District 108 FSRP Sites TO#2

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2.0 PROJECT DESCRIPTION

2.1 Project Background

Under its Slope Stability FSRP Sites Project (Proposed Project), RD 108 is proposing to conduct slope stability repair of two segments of the existing Colusa Basin Drainage Canal East Levee. The first segment is a 640-foot-long segment between Tule Road and White Road at Levee Mile 17.2 (Site A), and the second segment is a 150-foot-long segment between Yolo County Line Road and White Road at Levee Mile 12.7 (Site B). The Project also proposes to use a spoils area for depositing excess excavated material (Spoils Area) located in Yolo County between County Road 108 and State Route (SR) 45.

The Colusa Basin Drainage Canal (also known as "2047 Canal") is a 70-mile earthen channel constructed in the 1920s to convey water supply from the Glenn-Colusa Canal south from the Colusa National Wildlife Refuge area to farms and ranches in southern Colusa County and northern Yolo County. It also conveys agricultural drainage and stormwater flows from the same area into the Sacramento River (through the Knights Landing Outfall Gates), and the Yolo Bypass (through the Wallace Weir). It is also slated to connect to the Tehama Colusa Canal through a new 30-mile pipeline as part of the planned Sites Reservoir system, which would connect to the CBDC approximately 4 miles south of the Colusa/Yolo County border.

The Colusa Basin Drainage Canal East Levee (CBDC) is a back levee that was built to prevent flooding from the Colusa Basin into the area between the CBDC and the Sacramento River in Colusa and Yolo Counties. It was originally built by local landowners using materials available to them at the time but has since become part of the federally sponsored Sacramento River Flood Control Project. The levee is integral to the system-wide performance of the Flood Control Project.

Past studies by the District predicted that future failure of the Colusa Basin Drainage Canal East Levee was likely, and the results would be catastrophic. Flooding is a significant problem in Colusa County. Historically, the area has been at risk of flooding primarily during the winter and spring months during heavy rainfall and snowmelt runoff. Normally, storm floodwaters are kept within defined limits by a variety of storm drainage and flood control measures. Occasionally, extended heavy rains result in floodwaters that exceed normal high-water boundaries and cause damage.

2.2 Project Location

The Proposed Project is composed of three separate sites that cumulatively total approximately 16.34 acres (Figure 1-1). The northern portion of the Project (Site A) is located in Colusa County between Tule Road and White Road, in the northern half of Section 10 of Township 13 North, Range 1 West. The southern portion of the Project (Site B) is located in Colusa County between White Road and Yolo County Line Road, in the eastern half of the southwestern quarter of Section 30 of Township 13 North, Range 1 East. The spoils area where material will be hauled and stored (Spoils Area) is located in Yolo County on the bank of an unnamed canal between County Road 108 and SR-45, in the southwestern quarter of Section 26 of Township 12 North, Range 1 East, Mount Diablo Base and Meridian, as depicted on the 1953 (photorevised 1973) U.S. Geological Survey (USGS) Dunnigan, California and 1952 (photorevised 1973) El

Dorado Bend, California 7.5-minute topographic quadrangle maps. The Accessors Parcel Numbers (APNs) for the Proposed Project are 022-210-034-000, 022-210-001-000, 022-210-036-000, 022-210-035-000, and 053-170-007-000.

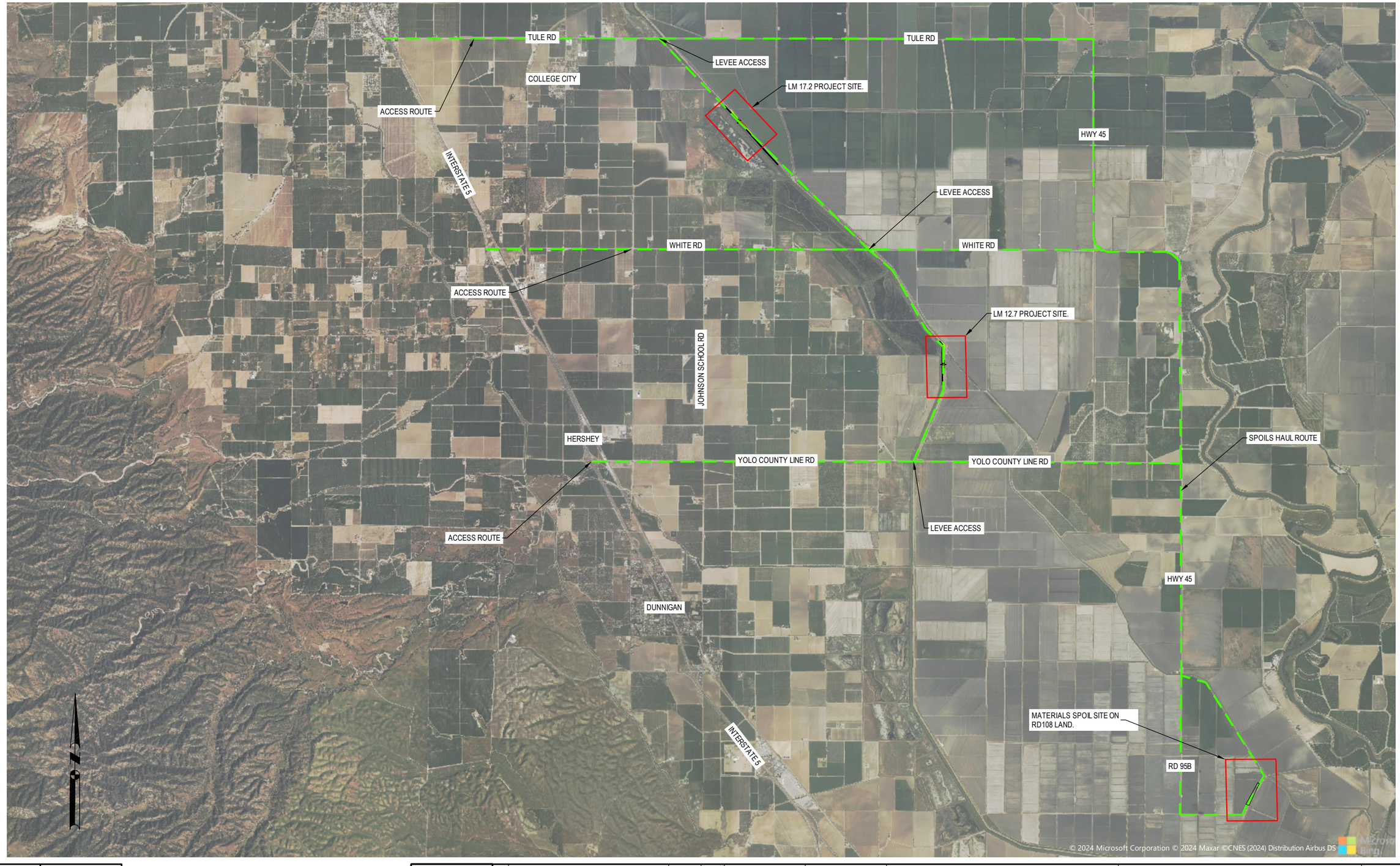
2.3 Project Objectives

The Proposed Project is to repair two critical levee slip sites. A levee "slip site" refers to a location where a section of the levee has experienced a slip or slide, often due to instability in the soil or structural issues. Slips compromise the integrity of the levee, which can lead to breaches and flooding. At these two sites, the landside levee slopes have slipped causing deformation of the levee crowns and landside slopes. By repairing the levee, this would help to protect the health and safety of the nearby residents, agricultural land, and the levee. The Project will also attempt to minimize any future slips.

2.4 Construction Methods

Site-specific engineering solutions will be based on the location and magnitude of the slope instability at each area, but generally, the slope damage would be repaired by new engineered material fill. The levee slopes with the slope stability damage will be cleared and grubbed and excavation will be performed to remove the slip material. All excavated materials would be transported to the designated Spoils Site, as shown on Figure 1-1 and Figure 2-1. New engineered material would be imported, then backfilled and compacted. The repair slopes would be constructed to be no steeper than one foot horizontal to one-foot vertical and would be constructed to match the existing levee sections. There would be a total of 2.6-acres subject to large-scale excavation and fill activities. The excavated material and import material will be placed and compacted in accordance with the construction standards listed in Title 23 of the CCR for levee construction. Revegetation would occur with an approved seed mix and existing vegetation would only be removed to the extent necessary for the erosion repair. However, no trees are proposed to be removed as part of the Proposed Project. Construction details for each repair location are as follows:

- Typical heavy construction equipment used for each Project location would include: four haul trucks, one skip loader, one excavator, one dozer, and one water truck.
- Maximum excavation depth would be 15 feet in both upland and aquatic areas.
- Daily maximum number of workers per repair location would be 4, excluding truck drivers. It is anticipated that there would be 22 trips per day and an import of 45,000 cubic yards of new material, and 45,000 cubic yards of removed material.
- Solid waste generated by the Project would include limited quantities of removed vegetation that would be disposed at the nearest solid waste disposal facility.
- The Site A portion of the Proposed Project would be accessed from levee service roads from White Road and Tule Road, which can be reached by Interstate 5. The Site B portion of the Proposed Project would be accessed from levee service roads from Tule Road and Yolo County Line Road, which can be reached by Interstate 5 or Highway 45. The Spoils Area would be accessed utilizing Interstate 5, then Yolo County Line Road to California Highway 45.



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PLOT DATE: Nov 18, 2024 - 3:01pm

811 Know what's below. Call before you dig.

SUBMITTAL	
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PROJECT ENGINEER

PRELIMINARY NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE	APPR.

DESIGN BY	ARR
DRAWN BY	ARR
CHECK BY	EAR
HORIZONTAL DATUM	CCS83, ZONE 2
VERTICAL DATUM	NAVD88

DRAWING SCALE
1" = 3500'

ORIGINAL DRAWING SCALE
0 ½" 1"

KSN inc. KJELDSEN SINNOCK NEUDECK
CIVIL ENGINEERS & LAND SURVEYORS
www.ksninc.com
711 N. Pershing Avenue
Stockton, CA 95203
209-946-0268
1550 Harbor Blvd., Suite 212
West Sacramento, CA 95691
916-403-5900

LEVEE SLIP REPAIR PROJECT
RECLAIMATION DISTRICT 108
YOLO COUNTY, CALIFORNIA

VINCINITY MAP AND ACCESS ROUTES

DATE
NOVEMBER 18, 2024

SHEET IDENTIFICATION
A
SHEET 1 OF 4

KSN PROJECT FILE NO.
2267-0190

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PROJECT ENGINEER

PRELIMINARY NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE	APPR.

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VERTICAL DATUM	NAVD88

DRAWING SCALE
1" = 100'

ORIGINAL DRAWING SCALE
0 ½" 1"

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LEVEE SLIP REPAIR PROJECT
RECLAIMATION DISTRICT 108
YOLO COUNTY, CALIFORNIA

LEVEE MILE 17.2 SITE PLAN

DATE
NOVEMBER 18, 2024

SHEET IDENTIFICATION
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SHEET 2 OF 4

KSN PROJECT FILE NO.
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PROJECT ENGINEER

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VERTICAL DATUM	NAVD88

DRAWING SCALE
1" = 75'

ORIGINAL DRAWING SCALE
0 ½" 1"

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LEVEE SLIP REPAIR PROJECT
RECLAIMATION DISTRICT 108
YOLO COUNTY, CALIFORNIA

LEVEE MILE 12.7 SITE PLAN

DATE
NOVEMBER 18, 2024

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SHEET 3 OF 4

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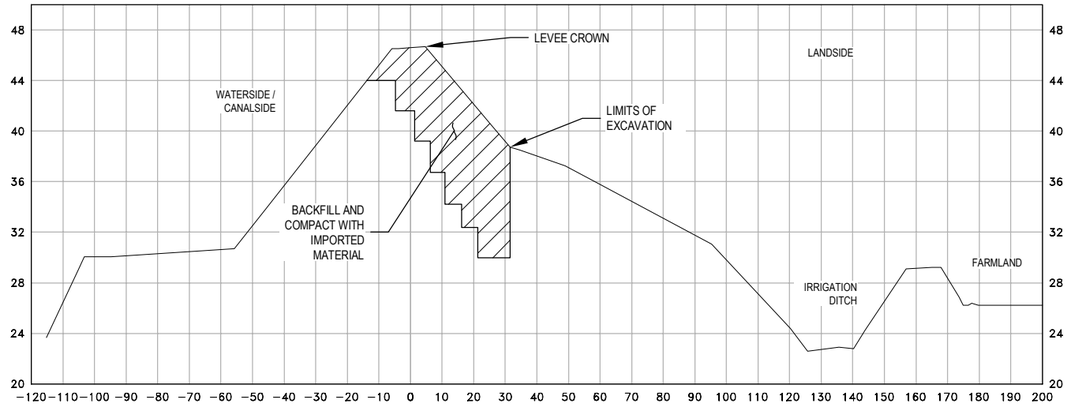

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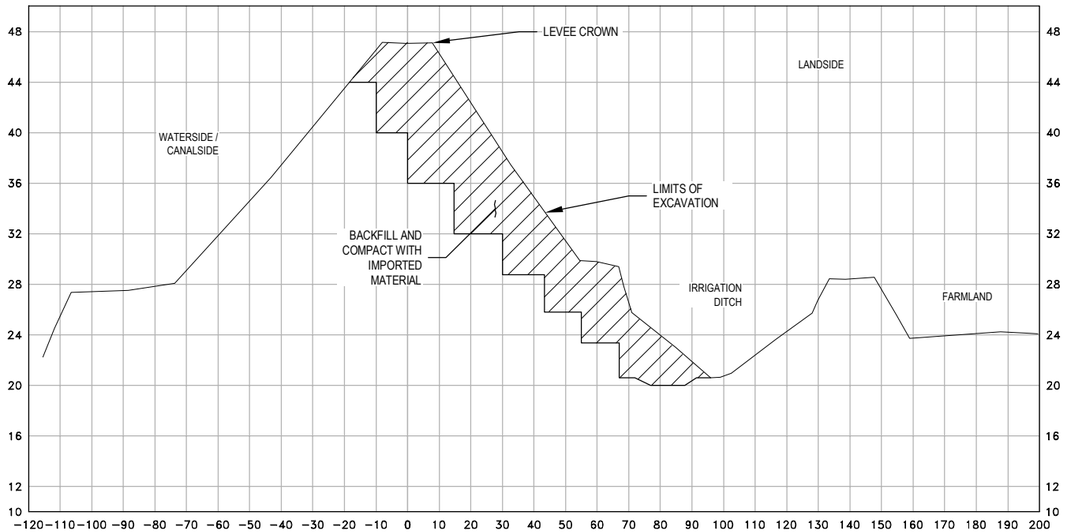

2 SECTION A-A: LM 12.7 EXCAVATION DETAIL

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PROJECT ENGINEER

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HORIZONTAL DATUM	CCS83, ZONE 2
VERTICAL DATUM	NAVD88

DRAWING SCALE: 1" = 4'

ORIGINAL DRAWING SCALE: 0 ½" 1"

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LEVEE SLIP REPAIR PROJECT
RECLAIMATION DISTRICT 108
YOLO COUNTY, CALIFORNIA

DETAILS

DATE
NOVEMBER 18, 2024

SHEET IDENTIFICATION
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SHEET 4 OF 4

KSN PROJECT FILE NO.
2267-0190

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- Any fill or construction materials would be brought in utilizing trucks on existing roads. Any material staging would occur in the immediate vicinity of the work on the levee and on the levee toe roads, within designated stages areas.

2.5 Construction Timing

Construction is anticipated to start mid-summer of 2025 and complete construction in November 2025. Construction would take approximately twelve weeks. Construction activities will be conducted on Monday through Saturday, from 7:00 a.m. to 5:00 p.m..

2.6 Regulatory Requirements, Permits, and Approvals

RD 108 is the CEQA Lead Agency for the Proposed Project. To approve Project construction, RD 108 Board of Trustees must first comply with CEQA by adopting the IS/MND. The Board of Trustees could then consider the information contained in the IS/MND in making its decision to approve or deny the Project, approve the construction plans, and file a Notice of Determination with the State Clearinghouse. Other approvals that may be required to implement the project are described below.

2.4.1 Federal

- U.S. Army Corps of Engineers (USACE): Compliance with Section 404 of the Clean Water Act (CWA) if discharge of dredged materials or fill to waters of the United States would occur.
- U.S. Fish and Wildlife Service (USFWS): Consultation under the federal Endangered Species Act (ESA) as necessary for federal agency actions (Sections 7 and 10 of the ESA).

2.4.2 State

- California Department of Fish and Wildlife (CDFW): Compliance with streambed alteration requirements (California Fish and Wildlife Code Section 1602) if any modification to watercourses or their adjacent riparian habitats would occur, and Section 2081 of the California ESA if take of listed species is likely to occur.
- The Regional Water Quality Control Board (RWQCB) implements water quality regulations under the federal CWA. These regulations require Section 401 water quality certification prior to issuance of any Section 404 permit, if required.

2.4.3 Local

- Colusa County: A Grading Permit is required if more than 50 cubic yards of soil is being moved. The intent is to ensure that grading minimizes impacts to drainage, erosion, and the natural features of the site.

2.7 Consultation with California Native American Tribe(s)

Assembly Bill (AB) 52 requires that prior to the release of a CEQA document for a project, an agency begin consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of the project if:

1. The California Native American tribes requested to the lead agency, in writing, to be informed by the Lead Agency through formal notification of Proposed Projects in the geographic area that is traditionally and culturally affiliated with the tribes; and,

2. The California Native American tribes respond in writing, within 30 days of receipt of the formal notification, and requests the consultation. RD 108 sent an initial notification letter via certified mail on September 11, 2024, to the Yocha Dehe Wintun Nation. An initial consultation letter was submitted via the portal for the United Auburn Indian Community (UAIC) and via email to the Wilton Rancheria. The initial consultation letter provided tribes with Project information and an invitation to consult on the Project. RD 108 requested responses to the offer to consult within 30 days of the receipt of the letter. On September 11, 2024, the United Auburn Indian Community responded that the project fell outside of UAIC's area of traditional and cultural affiliation, and did not want to consult. On October 30, 2024, the Yocha Dehe Wintun Nation responded and formally requested to consult. The Wilton Rancheria group did not respond. Tribal consultation concluded with the Yocha Dehe Wintun Nation on November 19, 2024.

Further information on potential Tribal Cultural Resources in the Project Area is provided in Section 4.18 *Tribal Cultural Resources* of this IS/MND.

3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED AND DETERMINATION

3.1 Environmental Factors Potentially Affected

The Project would potentially affect the environmental factors checked below; there is at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

Determination

On the basis of this initial evaluation:

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

Meegan Nagy
Deputy Manager

Date

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4.0 ENVIRONMENTAL CHECKLIST AND DISCUSSION

4.1 Aesthetics

4.1.1 Environmental Setting

4.1.1.1 Existing Scenic Resources

State Scenic Highways

The California Scenic Highway Program protects and enhances the scenic beauty of California's highways and adjacent corridors. A highway can be designated as scenic based on how much natural beauty can be seen by users of the highway, the quality of the scenic landscape, and if development impacts the enjoyment of the view (California Department of Transportation [Caltrans] 2024).

Yolo County and Colusa County have no designated federal or state scenic highways. Caltrans identifies a portion of SR 16 (from approximately the unincorporated community of Capay at CR 85, north to the county boundary) as eligible for designation as a State Scenic Highway, but is not officially designated. This portion of SR 16 is not located near the Project Area.

Per the Yolo County General Plan (Yolo County 2018), Yolo County has the following roadways designated as local scenic roadways:

- State Route 16 (Colusa County line to Capay) – approximately 9.9 miles away from the closest project site location (Spoils Site).
- State Route 128 (Winters to Napa County line) – approximately 24 miles away from the closest project site location (Spoils Site).
- County Roads 116 and 116B (Knights Landing to eastern terminus of County Road 16) – approximately 7.55 miles away from the closest project site location (Spoils Site).
- County Roads 117 and Old River Road (County Road 107 to West Sacramento) – approximately 12.45 miles away from the closest project site location (Spoils Site).
- South River Road from Jefferson Boulevard in the City of West Sacramento to the Sacramento County line (Spoils Site)- approximately 33 miles away from the closet project site (Spoils Site).

4.1.1.2 Visual Character of the Project Site

The Project area is composed of relatively flat terrain. Elevations range from approximately 15 to 50 feet above Mean Sea Level (MSL). The Project area includes two sections along a levee adjacent to the Colusa Basin Drainage Canal (Site A and Site B), and a section following a service road between flooded-irrigated fields and a drainage canal (the Spoils Area). The District maintains the Project areas annually for vegetation management and fire risk abatement. Surrounding land uses are primarily rice cultivation and other forms of intensive agriculture.

4.1.1.3 Existing Sources of Light and Glare

Because of the predominantly rural character of the Project Area, night lighting and glare mostly occur within and around the developed community of College City, which is two miles away from the closest Project location area, Site A. Existing sources of ambient nighttime lighting include exterior lighting along buildings for safety, lights within buildings that illuminate the exteriors of buildings through windows; street lighting; and vehicle headlights. Glare could be created by reflection of natural (i.e., sunlight) and artificial light off existing windows and building surfaces in the residential area.

4.1.2 Regulatory Framework

4.1.2.1 Federal

National Scenic Byways Program

The National Scenic Byways program is part of the U.S. Department of Transportation Federal Highway Administration (FHWA). Under the program, the U.S. Secretary of Transportation recognizes certain roads as National Scenic Byways or All-American Roads based on their archaeological, cultural, historic, natural, recreational, and scenic qualities.

4.1.2.2 State

State Scenic Highway Program

The State Scenic Highway Program was established to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. A local jurisdiction adopts a scenic Corridor Protection Program, applies to Caltrans for scenic highway approval, and receives notification from Caltrans that the highway has been designated as a Scenic Highway. When a city or county nominates an eligible scenic highway for official designation, it defines the scenic corridor, which is land generally adjacent and visible to a motorist on the highway. California laws governing the State Scenic Highway Program are found in the Streets and Highways Code, Sections 260 through 263.

4.1.2.3 Local

Colusa County

The following goals and policies in the Open Space and Recreation Element and Land Use and Community Character Element of the County of Colusa 2030 General Plan (Colusa County 2012) are applicable to the Project:

Policy CC-15: *Preserve and enhance the rural landscape as an important scenic feature of the County.*

Policy OSR 1-10: *To the maximum extent feasible, maintain and protect views of the County's scenic resources, including water bodies, the Sutter Buttes, Snow Mountain, St. John Mountain, Goat Mountain, unique geologic features and wildlife habitat.*

Policy OSR 1-16: *Protect and preserve the following features along rural character corridors and in scenic areas to the extent appropriate and feasible:*

- *Trees, wildflowers, and other natural or unique vegetation.*
- *Landforms and natural or unique features.*
- *Views and vistas, including expansive views of open space and agricultural lands.*
- *Historic structures (where feasible), including buildings, bridges, and signs.*

Yolo County

The following goals and policies in the Land Use and Community Character Element of the County of Yolo 2030 General Plan (Yolo County 2018) are applicable to the Project:

Policy CC-1.2: *Preserve and enhance the rural landscape as an important scenic feature of the county.*

Policy CC-1.3: *Protect the rural night sky as an important scenic feature to the greatest feasible extent where lighting is needed.*

Policy CC-1.12: *Preserve and enhance the scenic quality of the county's rural roadway system. Prohibit projects and activities that would obscure, detract from, or negatively affect the quality of views from designated scenic roadways or scenic highways.*

Policy CC-1.16: *The following features shall be stringently regulated along designated scenic roadways and routes with the intent of preserving and protecting the scenic qualities of the roadway or route:*

- *Signage*
- *Architectural design of adjoining structures*
- *Construction, repair and maintenance operations*
- *Landscaping*
- *Litter control*

- *Water quality*
- *Power poles, towers, above-ground wire lines, wind power and solar power devices and antennae*

Policy CC-1.17: *Existing trees and vegetation and natural landforms along scenic roadways and routes shall be retained to the greatest feasible extent. Landscaping shall be required to enhance scenic qualities and/or screen unsightly views and shall emphasize the use of native plants and habitat restoration to the extent possible. Removal of trees, particularly those with scenic and/or historic value, shall be generally prohibited along the roadway or route.*

4.1.3 Aesthetics (I) Environmental Checklist and Discussion

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

Less Than Significant Impact.

The Colusa Basin Drainage Canal is a human-made drainage channel with levees and vegetation, with no unique or outstanding visual features typical of several similar drainage channels in the Valley. The Project will include clearing and grubbing the work area, excavating the levee down to the failure slip plane, and reconstructing the levee with slope with suitable fill, some of which may be imported fill. Construction equipment will be active during repair activities; however, the general public's view of these areas will be brief from vehicles driving around the area. Project changes in levee materials and vegetation removal will not impact any of the existing views of the Project area, or impact any distant views of the mountains or hills. Therefore, Project impacts on scenic vistas are less than significant.

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

No Impact.

There are no state scenic highways and no other scenic resources in the Project vicinity. Therefore, there is no impact in this area.

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

Less Than Significant Impact.

The Project does not involve the removal of any riparian vegetation or trees. Some vegetation will be removed as part of the grubbing of the work area slopes of the levee. Areas of removed vegetation that are along levee banks that would create visual breaks in the riparian zone that are a common visual occurrence in several other human-made channels and would only be visible by the public from vehicles driving around the Project area. Additionally, the Project plans to re-seed in areas where vegetation has been removed after construction. In addition, heavy equipment operating on and around Colusa Basin Drainage Canal levees and access roads during Project construction would be visible from around White Road, Tule Road, and County Road 108 but would be short-term and only there for the duration of construction. For these reasons, the Project would not substantially degrade the visual character of the site and surroundings, resulting in a less than significant impact.

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

Less Than Significant Impact.

The Project will not use any permanent materials that will create a new source of light or glare. Some glare could occur from sunlight shining on metal equipment or machinery during Project construction, but this would be temporary and not substantial. While nighttime work is not anticipated, there is a chance that it may be required during the Project that may require temporary construction lighting. Temporary construction lighting will be directed away from any existing roadways and residential development to maintain consistency with Colusa County and Yolo County municipal code and general plan requirements, protecting the rural night sky. Therefore, the Project would have a less than significant impact in this area.

4.1.4 Mitigation Measures

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

4.2 Agriculture and Forestry Resources

4.2.1 Environmental Setting

The repair segments along the Colusa Basin Drainage Canal (Site A and Site B) are both zoned E-A Exclusive Agricultural (Colusa County 2024). The spoils location is zoned A-N Agricultural Intensive (Yolo County 2024).

The California Department of Conservation (DOC) manages the Farmland Mapping and Monitoring Program, which identifies and maps significant farmland. Farmland is classified using a system of five categories, including Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land. The classification of farmland as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance is based on the suitability of soils for agricultural production, as determined by a soil survey conducted by the Natural Resources Conservation Service (NRCS). The California DOC manages the California Important Farmland Finder, an interactive website program that identifies the entire Project Area (Site A, Site B, and the Spoils Area) as being within an area of Prime Farmland (DOC 2024a).

The California Land Conservation Act, better known as the Williamson Act, is a non-mandated state policy providing for protection of agricultural and open space lands that meet local size and land use criteria. Land under a Williamson Act contract is restricted to agricultural uses for a term of no less than 10 years. According to the California Williamson Act Enrollment Finder, the canal repair sections nor the spoils staging area are within a Williamson Act location (DOC 2024b).

4.2.2 Regulatory Framework

4.2.2.1 Federal

Farmland Protection Policy Act (7 United States Code [USC Section 4201)

The purpose of the Farmland Protection Policy Act is to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. Projects are subject to Farmland Protection Policy Act requirements if they irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or rely on assistance from a federal agency (U.S. Department of Agriculture [USDA] 2024).

4.2.2.2 State

California Department of Conservation, Division of Land Resource Protection

The California DOC applies the NRCS soil classifications to designate agricultural lands as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland. Agricultural lands with these designations are referred to as *Farmland*.

Williamson Act

The California Land Conservation Act, better known as the Williamson Act, is a non-mandated state policy providing for protection of agricultural and open space lands that meet local size and land use criteria. Land under a Williamson Act contract is restricted to agricultural uses for a term of no less than 10 years.

Farmland Mapping and Monitoring Program

The Important Farmland Inventory System initiated in 1975 by the USDA NRCS classifies land based on 10 soil and climatic characteristics. The DOC started a similar system of mapping and monitoring for California in 1980, known as the Farmland Mapping and Monitoring Program.

California Agriculture Land Evaluation and Site Assessment (LESA) Model

The California Agriculture LESA model was developed in 1997 based on the federal LESA system. It can be used to rank the relative importance of farmland and the potential significance of its conversion on a site-by-site basis. The California LESA model considers the following factors: land capability, Storie Index, water availability (drought and non-drought conditions), land uses within 0.25 mile, and protected resource lands (e.g., Williamson Act lands) surrounding the property. A score can be derived and used to determine if the conversion of a property would be significant. Under CEQA, lead agencies may refer to the LESA model in their environmental analysis but are not required to do so.

4.2.2.3 Local

Colusa County

The following goals and policies of the County of Colusa 2030 General Plan, Agriculture Element (Colusa County 2012) are applicable to the Project:

GOAL AG-1:Preserve and protect agricultural land.

Policy AG 1-1:	*The following General Plan land use designations are considered agricultural lands: Agricultural General (AG), Agricultural Upland (AU), and Agricultural Transition (AT).*
Policy AG 1-8:	*Protect agricultural lands from urban encroachment by limiting the extension of urban service facilities and infrastructure, particularly public water and sewer.*
Policy AG 1-12:	*Agricultural uses shall continue to be protected through on-going adherence to and implementation of the County's right to farm ordinance (Colusa County Code Chapter 34, Farming Practices).*

Policy AG 2-11: Assist landowners in resolving water rights, water delivery, and water supply issues with other agencies such as the California Department of Fish and Game, the U.S. Army Corps of Engineers, the U.S. Bureau of Reclamation, and the California Department of Water Resources.

Yolo County

The following goals and policies of the County of Yolo 2030 Countywide General Plan (Yolo County 2009) are applicable to the Project:

GOAL LU-2: Agricultural Preservation. Preserve farmland and expand opportunities for related business and infrastructure to ensure a strong local agricultural economy. (See the Agriculture and Economic Development Element for a more comprehensive treatment of this issue.)

Policy LU-2.4: Vigorously conserve, preserve, and enhance the productivity of the agricultural lands in areas outside of adopted community growth boundaries and outside of city "Spheres of Influence".

Policy LU-3.4: Locate and design services and infrastructure to only serve existing and planned land uses. Actions that will induce growth beyond planned levels are prohibited.

Policy LU-3.5: Avoid or minimize conflicts and/or incompatibilities between land uses.

Policy LU-3.6: Maintain the compatibility of surrounding land uses and development, so as not to impede the existing and planned operation of public airports, landfills and related facilities and community sewage treatment facilities.

GOAL CC-1: Preservation of Rural Character. Ensure that the rural character of the County is protected and enhanced, including the unique and distinct character of the unincorporated communities.

GOAL AG-1: Preservation of Agriculture. Preserve and defend agriculture as fundamental to the identity of Yolo County.

Policy AG-1.1: Protect and enhance the county's four key agricultural sectors. This includes: (1) retaining existing growers and processors of crops; (2) encouraging the growth of emerging crops and value-added processing: (3) supporting small and organic producers and their ability to serve visitors; and (4) enhancing the transfer of new technologies into practical applications for seeds, crops, fuels, alternative energy, food processing, etc.

Policy AG-1.14: Preserve agricultural lands using a variety of programs, including the Williamson Act, Farmland Preservation Zones (implemented through the Williamson Act), conservation easements, an Agricultural Lands Conversion Ordinance and the Right-to-Farm Ordinance.

Policy AG-1.18: When undertaking improvement of public roadways and drainage facilities, consult with adjoining farmland owners and incorporate designs that minimize impacts on agriculture.

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

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

Less Than Significant Impact.

The Project consists of slope stability repair along two segments of the Colusa Basin Drainage Canal East Levee, a 150-foot-long segment between Yolo County Line Road and White Road, and a 640-foot-long segment between White Road and Tule Road. The Project also proposes to use a spoils staging area for depositing excess excavated material; this area is located in Yolo County between County Road 108 and State Route 45. All of the Project locations are identified as Prime Farmland. However, Project activities will not change the use of the access roads, staging area, or levee and will not convert Prime Farmland to nonagricultural use. Implementation of the Proposed Project would benefit the surrounding agricultural land, as if the Project were not implemented, a breach of the levee could occur which would flood the surrounding land. Therefore, any impacts would be less than significant.

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

Less Than Significant Impact.

Although some of the existing levee toe or slope access roads that will be used by the Project are on lands zoned for agricultural use, temporary and intermittent Project activities (equipment and vehicle access and materials staging) will not conflict with current agricultural uses or Williamson Act contracts. As mentioned above, implementation of the Proposed Project would benefit the surrounding agricultural

land, as if the Project were not implemented, a breach of the levee could occur which would flood the surrounding land. Therefore, any impacts would be less than significant.

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

No Impact.

The Project Site is not located in a forestland protection or timber production area. The Project would have no impact in this area.

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

No Impact.

No identified forest lands exist on the Project Site or within the vicinity of the Project. The Project would have no impact in this area.

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

Less Than Significant Impact.

The Proposed Project is located within unincorporated Colusa and Yolo County on land zoned for agricultural use but used as a human-made flood control drainage channel. Project activities involve grading, excavation of soils, and replacement on fill within the Colusa Basin Drainage Canal East Levee, but would not expand landside levee footprints into adjacent Prime Farmlands or result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use. As mentioned above,

implementation of the Proposed Project would benefit the surrounding agricultural land, as if the Project were not implemented, a breach of the levee could occur which would flood the surrounding land. Therefore, any impacts would be less than significant.

4.2.4 Mitigation Measures

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

4.3 Air Quality

4.3.1 Environmental Setting

Air quality in a region is determined by its topography, meteorology, and existing air pollutant sources. These factors are discussed below, along with the current regulatory structure that applies to the Northern Sacramento Valley Air Basin (NSVAB), which encompasses the Project Site, pursuant to the regulatory authority of the air pollution control officer for the region, the Colusa County Air Pollution Control District (CCAPCD 2024)

The NSVAB is composed of Colusa, Butte, Glenn, Shasta, Sutter, Tehama, and Yuba Counties. Colusa County has a Mediterranean climate, characterized by hot, dry summers and cool, wet winters. Winter weather is governed by cyclonic storms from the North Pacific, while summer weather is typically subject to a high-pressure cell that deflects storms from the region. The environmental conditions of Colusa County are conducive to potentially adverse air quality conditions. The basin area traps pollutants between two mountain ranges to the east and the west. This problem is exacerbated by a temperature inversion layer that traps air at lower levels below an overlying layer of warmer air. Prevailing winds in the area are generally from the south and southwest. Sea breezes flow over the San Francisco Bay Area and into the Sacramento Valley, transporting pollutants from the large urban areas.

In Colusa County, mobile vehicle emissions are the primary source of nitrogen oxides (NO_x), a precursor to ozone development. Wood combustion is the largest source of fine particulate matter ($PM_{2.5}$) in Colusa County, particularly residential woodstove & fireplace use and managed open burning. Area wildfires can also contribute a large amount of ozone precursors and particulate matter when active.

Both the U.S. Environmental Protection Agency (USEPA) and the California Air Resource Board (CARB) have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants representing safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The six criteria pollutants are ozone (O_3), carbon monoxide (CO), particulate matter (PM), NO_x, sulfur dioxide (SO_2), and lead. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. Colusa County is designated as a nonattainment area for the state standard for coarse particulate matter (PM_{10}) and is designated as an unclassified/attainment area for other state standards and all federal standards (CARB 2022).

The CCAPCD is the air pollution control agency for Colusa County, including the Project Site. The agency's primary responsibility is ensuring that the federal and state ambient air quality standards are attained and maintained in the Colusa County portion of the NSVAB. The CCAPCD, along with other air districts in the NSVAB, has committed to jointly prepare and implement the NSVAB Air Quality Attainment Plan for the purpose of achieving and maintaining healthful air quality throughout the air basin. The CCAPCD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, and conducting public education campaigns, as well as many other activities.

4.3.2 Air Quality (III) Environmental Checklist and Discussion

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

No Impact.

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

The Northern Sacramento Valley Planning Area 2021 Triennial Air Quality Attainment Plan (2021 AQAP) is the most recent air quality planning document covering Colusa County. Air quality attainment plans are a compilation of new and previously submitted plans, programs (e.g., such as monitoring, modeling, permitting), district rules, state regulations, and federal controls describing how the state will attain ambient air quality standards. State law makes CARB the lead agency for all purposes related to the 2021-AQAP. Local air districts prepare air quality attainment plans and submit them to CARB for review and approval. The 2021 AQAP includes forecast Reactive Organic Gases (ROG) and NO_x emissions (O_3 precursors) for the entire NSVAB. The 2021 AQAP provides local guidance for air basins to achieve and maintain attainment of the California O_3 standard. Pollutant control strategies are based on the latest scientific and technical information and planning assumptions, and updated emission inventory methodologies for various source categories.

A Project would not be consistent with the 2021 AQAP if it would result in an increase in the frequency or severity of existing air quality violations, or cause or contribute to new violations, or delay the timely

attainment of air quality standards or the interim emissions reductions specified in the AQAP. The Project would not exceed the short-term construction air quality standards (Table 4.3-1) and the Project would not be as source of air quality emissions once the Project construction is complete. As such, the Project would not conflict with the NSVAB Air Quality Attainment Plan. There would be no impact.

Table 4.3-1. Construction-Related Criteria Air Pollutant Emissions

Construction Year	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Pounds Per Day						
Construction Calendar Year One	0.74	4.82	5.18	0.01	0.99	0.57
Construction Calander Year Two	0.12	0.55	0.67	0.00	0.02	0.02
Potentially Significant Impact Threshold	*25*	*25*	*500*	*80*	*80*	--
Exceed Daily Significance Threshold?	**No**	**No**	**No**	**No**	**No**	**N/A**

Notes: Average daily emissions taken from CalEEMod outputs. Construction emissions account for the import of 45,000 cubic yards of new material and the export of 45,000 cubic yards of existing material.
CO = Carbon Monoxide; N/A = Not Applicable; NO_x = Nitrogen Oxide; $PM_{2.5}$ = Fine Particulate Matter; PM_{10} = Coarse Particulate Matter; ROG = Reactive Organic Gas; SO_2 = Sulfur dioxide

Source: California Emissions Estimator Model (CalEEMod) version 2022.1. Refer to Appendix A for Model Data Outputs. CARB 2024.

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

Less Than Significant Impact.

Air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's individual emissions exceed its identified significance thresholds, the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulative considerable.

Implementation of the Proposed Project could result in air quality impacts during construction. As the Project is proposing repairs to the existing Colusa Basin Drainage Canal (CBDC) levee, the Project would not be a source of operational emissions. Neither Colusa County nor the CCAPCD have established air pollution thresholds under the California Environmental Quality Act (CEQA) for the assessment of air quality impacts. However, CCAPCD staff has recommended that the CEQA documents use CCAPCD Rule 403, New Source Review, Best Available Control Technology thresholds as CEQA significance threshold for criteria pollutant emissions. Where criteria air pollutant quantification was required, emissions were

modeled using the California Emissions Estimator Model (CalEEMod), version 2022.1. CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. Project construction-generated air pollutant emissions were calculated using CalEEMod model defaults for Colusa County as well as information provided by the Project proponent such as construction timing, the type of construction equipment, and the amount of material that will be imported and exported. Operational air pollutant emissions are discussed qualitatively. Refer to Appendix A (ECORP 2024a) for all CalEEMod output files.

4.3.2.1 Project Construction Emissions

Emissions associated with Project construction would be temporary and short-term but have the potential to represent a significant air quality impact. Three basic sources of short-term emissions will be generated through construction of the Proposed Project: operation of the construction vehicles (i.e., tractors, dozers, backhoes), the creation of fugitive dust during clearing and grading. Construction activities such as excavation and grading operations, construction vehicle traffic, and wind blowing over exposed soils would generate exhaust emissions and fugitive PM emissions that affect local air quality at various times during construction. Effects would be variable depending on the weather, soil conditions, the amount of activity taking place, and the nature of dust control efforts. The dry climate of the area during the summer months creates a high potential for dust generation.

Construction-generated emissions associated with the Proposed Project were calculated using the CARB-approved CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. See Appendix A (ECORP 2024a) for more information regarding the construction assumptions, including construction equipment and duration, used in this analysis.

Predicted average daily construction-generated emissions for the Proposed Project are summarized in Table 4.3-1. Construction-generated emissions are short-term and of temporary duration, lasting only as long as construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the applicable thresholds of significance.

As shown in Table 4.3-1, emissions generated during Project construction would not exceed the potentially significant impact thresholds.

Criteria pollutant emissions generated during Project construction would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard. Since the Project's emissions do not exceed the daily significance thresholds, no exceedance of the ambient air quality standards would occur, and no regional health effects from Project criteria pollutants would occur. Construction impacts would be less than significant.

4.3.2.2 Project Operational Emissions

The Proposed Project would not include the provision of new permanent stationary or mobile sources of criteria air pollutant emissions, and therefore would not generate quantifiable criteria emissions from Project operations. The Project is proposing improvements to two segments along the CBDC levee. The Proposed Project's operations would not require any new crew or staff beyond current conditions; therefore, once the Proposed Project is implemented, there would be no increase in automobile trips to the area. Thus, the increases in any criteria pollutant emissions associated with the Project would not be substantial. No impact would occur.

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

Less Than Significant Impact.

Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

The Project is proposing repairs to two slope stability sites along the CBDC levee located in a very rural portion of Colusa County. The nearest sensitive receptors to the proposed improvements are rural residences located west of the levee road more than a mile distant.

4.3.2.3 Construction Generated Air Contaminants

Construction-related activities would result in temporary, short-term Proposed Project-generated emissions of diesel particulate matter (DPM), ROG, NO_x, CO, and PM_{10} from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., clearing, grading); soil hauling truck traffic; paving; and other miscellaneous activities. The portion of the NSVAB which encompasses the Project Area is designated as a nonattainment area for the state PM_{10} standard (CARB 2022). Thus, existing PM_{10}, and levels in the NSVAB are at unhealthy levels during certain periods. However, as shown in Table 4-1, the Project would not exceed the applicable significance thresholds for emissions.

The health effects associated with O_3 are generally associated with reduced lung function. O_3 is not emitted directly into the air but is formed through complex chemical reactions between precursor emissions of ROG and NO_x in the presence of sunlight. The reactivity of O_3 causes health problems because it damages lung tissue, reduces lung function and sensitizes the lungs to other irritants. Scientific evidence indicates that ambient levels of O_3 not only affect people with impaired respiratory systems,

such as asthmatics, but healthy adults and children as well. Exposure to O_3 for several hours at relatively low concentrations has been found to significantly reduce lung function and induce respiratory inflammation in normal, healthy people during exercise. This decrease in lung function generally is accompanied by symptoms including chest pain, coughing, sneezing and pulmonary congestion.

Studies show associations between short-term O_3 exposure and non-accidental mortality, including deaths from respiratory issues. Studies also suggest long-term exposure to O_3 may increase the risk of respiratory-related deaths. The concentration of O_3 at which health effects are observed depends on an individual's sensitivity, level of exertion (i.e., breathing rate), and duration of exposure. Studies show large individual differences in the intensity of symptomatic responses, with one study finding no symptoms to the least responsive individual after a 2-hour exposure to 400 parts per billion of O_3 and a 50 percent decrement in forced airway volume in the most responsive individual. Although the results vary, evidence suggests that sensitive populations (e.g., asthmatics) may be affected on days when the 8-hour maximum O_3 concentration reaches 80 parts per billion. Because the Project would not involve construction activities that would result in O_3 precursor emissions (ROG or NO_x) in exceedance of the significance thresholds, which are set to be protective of human health and account for cumulative emissions in the NSVAB, the Project is not anticipated to substantially contribute to regional O_3 concentrations and the associated health impacts.

CO tends to be a localized impact associated with congested intersections. In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. The Project would not involve construction activities that would result in CO emissions in exceedance of the significance thresholds, which are set to be protective of human health and account for cumulative emissions in the NSVAB. Thus, the Project's CO emissions would not contribute to the health effects associated with this pollutant.

Particulate matter (PM_{10} and $PM_{2.5}$) contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing. For construction activity, DPM is the primary toxic air contaminant (TAC) of concern. PM_{10} exhaust is considered a surrogate for DPM as all diesel exhaust is considered to be DPM and it contains $PM_{2.5}$ exhaust as a subset. As with O_3 and NO_x, the Project would not generate emissions of PM_{10} that would exceed significance thresholds. The increases of these pollutants generated by the Proposed Project would not on their own generate an increase in the number of days exceeding the National Ambient Air Quality Standards or California Ambient Air Quality Standards. Therefore, PM_{10} and $PM_{2.5}$ emissions, when combined with the existing PM emitted regionally, would have minimal health effect on people located in the immediate vicinity of the Project Site. Additionally, the Project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects from these pollutants.

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

4.3.2.4 Operational Air Contaminants

Examples of projects that emit toxic pollutants over long-term operations include oil and gas processing, gasoline dispensing, dry cleaning, electronic and parts manufacturing, medical equipment sterilization, freeways, and rail yards. Implementation of the Proposed Project would not result in the development of any substantial sources of air toxins. There are no stationary sources associated with the implementation of the Project. The Project would not attract heavy-duty trucks, a substantial source of DPM emissions, which spend long periods queuing and idling at the site. Therefore, the Project would not be a significant source of TACs after implementation. The Project would not result in a potentially significant contribution to regional concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants. No impact would occur.

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

No Impact.

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

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration

decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

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

Typical land uses considered to be potential sources of obnoxious odorous emissions include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The Proposed Project does not include any uses identified as being associated with odors. Therefore, there is no impact from the Proposed Project on odors.

4.3.3 Mitigation Measures

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

4.4 Biological Resources

This section describes the existing biological resources, including special-status species and sensitive habitats known to occur or that potentially occur in the Proposed Project Area. This information was provided in the *Biological Resources Assessment for the Reclamation District 108 Slope Stability Flood System Repair Program Sites Project* ([BRA], Appendix B, ECORP 2024b). The BSA includes all areas where Project-related activities may result in impacts to sensitive biological resources. The BSA is composed of three separate sites that cumulatively total approximately 16.34 acres. The information within the BRA has been summarized below.

4.4.1 Environmental Setting

The BSA is composed of relatively flat terrain located in the Sacramento Valley Subregion of the Great Central Valley floristic region of California. Elevations within the BSA range from approximately 15 to 50 feet above MSL. The average winter low temperature in the vicinity of the BSA is 38.5 degrees Fahrenheit, and the average summer high temperature is 91.7 degrees Fahrenheit. Average annual precipitation is approximately 14.4 inches, which falls as rain.

The BSA includes two sections along a levee adjacent to the Colusa Basin Drainage Canal (Site A and Site B), and a section following a service road between flooded-irrigated fields and a drainage canal (the Site B Spoils Area). The District maintains the BSA annually for vegetation management and fire risk abatement. Surrounding land uses are primarily rice cultivation and other forms of intensive agriculture.

The majority of the BSA is composed of *Avena* spp. – *Bromus* spp. Herbaceous Semi-Natural Alliance, which is a vegetation community consisting of annual, non-native grass species that are prevalent

throughout the region. Dominant species observed within this community include wild oats (*Avena* sp.), brome grass (*Bromus* sp.), and barley (*Hordeum* sp.).

4.4.1.1 Vegetation Communities

The following sections describe vegetation communities and land cover types within the BSA, as observed during the site reconnaissance. A full list of plants observed onsite can be found in Appendix B. The approximate extent of vegetation communities and land cover types are depicted on Figure 4.4-1.

The majority of the BSA is composed of *Avena* spp. – *Bromus* spp. Herbaceous Semi-Natural Alliance, which is a vegetation community consisting of annual, non-native grass species that are prevalent throughout the region. Semi-natural alliances are strongly dominated by nonnative plants that have become naturalized in the State, do not have state rarity rankings, and are not considered sensitive natural communities. Dominant species observed within this community include wild oats (*Avena* sp.), brome grass (*Bromus* sp.), and barley (*Hordeum* sp.). ECORP observed this community on the slopes of the levees within Site A, Site B, and along the shoulders of the access road within the Site B Spoils Area.

The western margins of Site A and Site B consist of a riparian canopy dominated by willows (*Salix* sp.) and resembles the S*alix gooddingii - Salix laevigata* Forest & Woodland Alliance, as characterized by the Manual of California Vegetation. The canopy of this vegetation community was outside of the BSA, and ECORP was unable to identify the understory composition of this community because it was underwater during the survey.

4.4.1.2 Aquatic Resources

ECORP mapped a total of 0.17 acre of aquatic resources within the BSA (Figure 4.4-2). A discussion of the aquatic resources is presented below, and the aquatic resources delineation map is presented in Figure 4.4-1.

Table 4.4-1. Aquatic Resources Within the BSA

Aquatic Resources Type	Area (acres)1
Other Waters	
Ditch	0.17
Total	**0.17**

Note: [1]Acreages represent a calculated estimation and are subject to modification following the USACE verification process.
BSA = Biological Study Area

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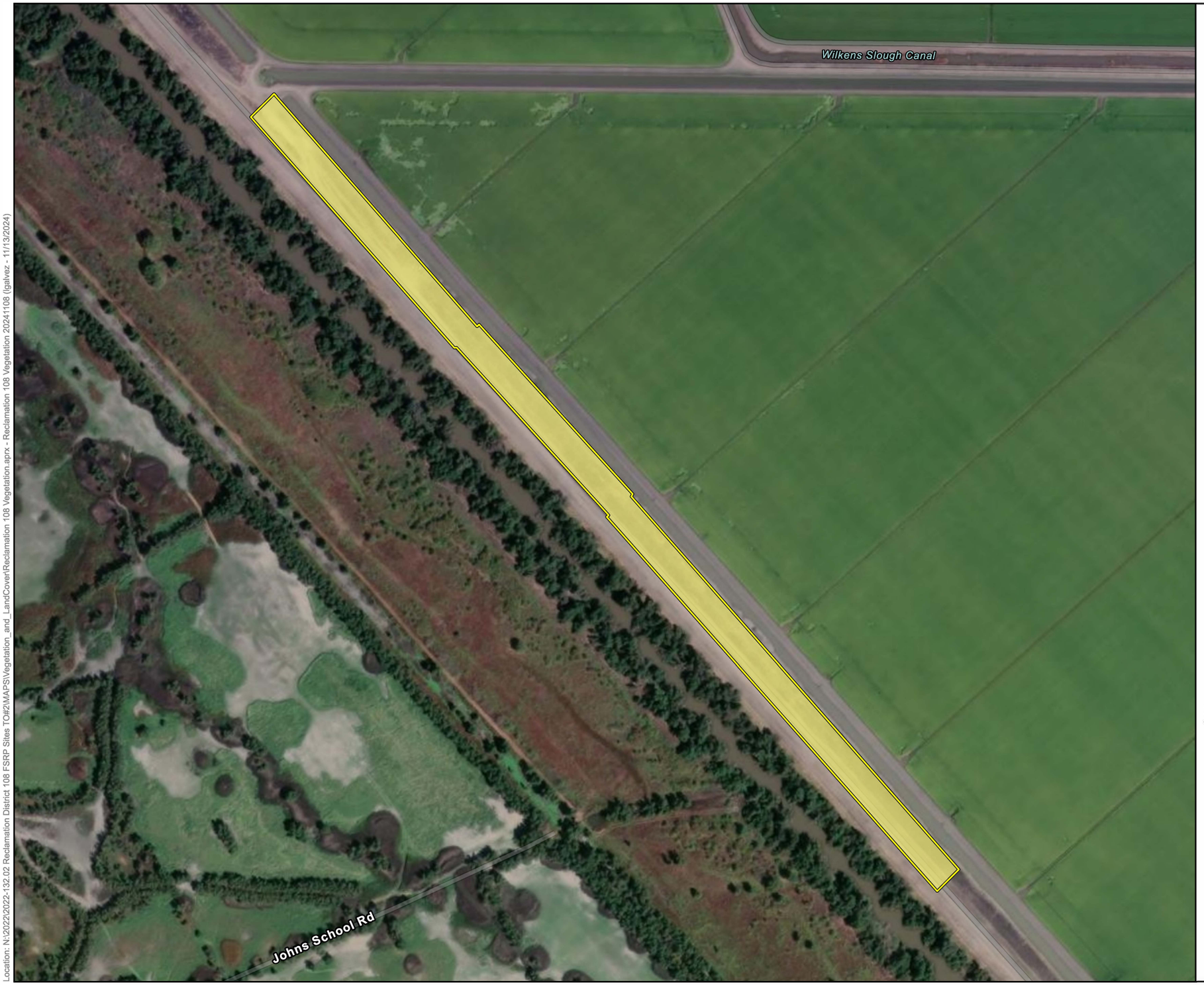


Map Contents

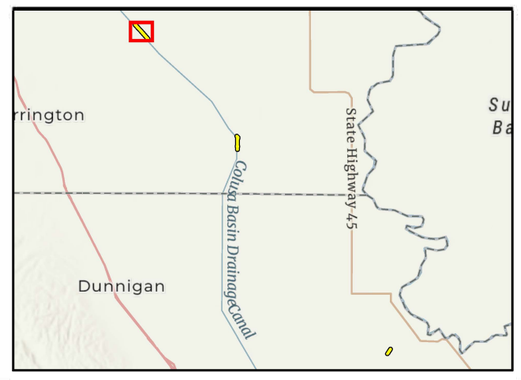
Study Area - 6.34 ac.

Vegetation Communities and Land Cover Types

Avena spp. – Bromus spp. Herbaceous Semi-Natural Alliance

Sources: Esri, Maxar (2023)

Other Related Info if Needed



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Map Date: 11/13/2024

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 300

Figure 4.4-1 Vegetation Communities and Land Cover Types (Page 1 of 3)

2022-132.02 Reclamation District 108

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Map Contents

Study Area - 3.94 ac.

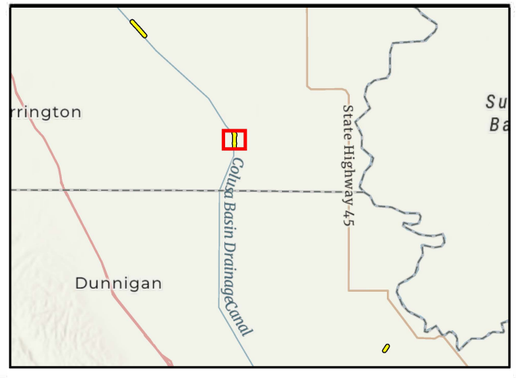
Vegetation Communities and Land Cover Types

Avena spp. – Bromus spp. Herbaceous Semi-Natural Alliance

Ditch

Sources: Esri, Maxar (2023)

Other Related Info if Needed



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Map Date: 11/13/2024

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 300

Figure 4.4-1 Vegetation Communities and Land Cover Types (Page 2 of 3)

2022-132.02 Reclamation District 108

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Map Contents

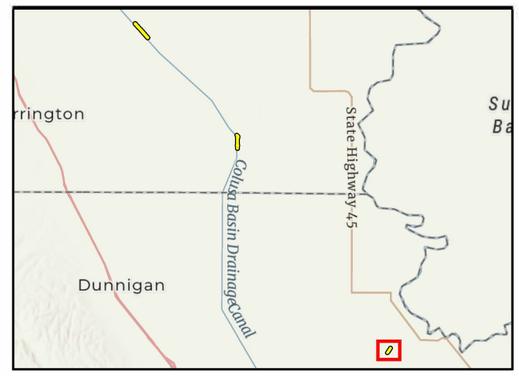
Study Area - 1.14 ac.

Vegetation Communities and Land Cover Types

Avena spp. – Bromus spp. Herbaceous Semi-Natural Alliance

Sources: Esri, Maxar (2023)

Other Related Info if Needed



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Map Date: 11/13/2024

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 300

Figure 4.4-1 Vegetation Communities and Land Cover Types (Page 3 of 3)

2022-132.02 Reclamation District 108

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Map Contents

Study Area - 6.34 ac.

Sample Points

Upland Point

Aquatic Resources

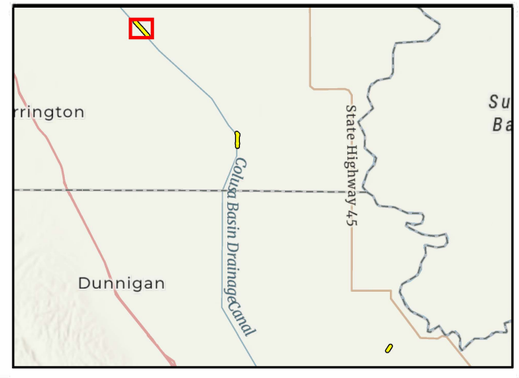
Other Waters

Ditch (0.17 acre)

Photo Source: Maxar (2023)
Boundary Source: Reclamation District 108
Delineator(s): Daniel Wong
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet

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

* The acreage value for each feature has been rounded to the nearest 1/100 decimal. Summation of these values may not equal the total potential Waters of the U.S. acreage reported.



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Map Date: 11/13/2024

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ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 300

Figure 4.4-2. Aquatic Resources Delineation

2022-132.02 Reclamation District 108

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Map Contents

Study Area - 3.94 ac.

Sample Points

Upland Point

OHWM Transect

Aquatic Resources

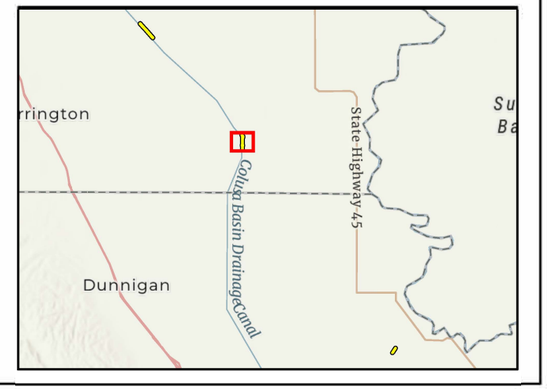
Other Waters

Ditch (0.17 acre)

Photo Source: Maxar (2023)
Boundary Source: Reclamation District 108
Delineator(s): Daniel Wong
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet

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

* The acreage value for each feature has been rounded to the nearest 1/100 decimal. Summation of these values may not equal the total potential Waters of the U.S. acreage reported.



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Map Date: 11/13/2024

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 300

Figure 4.4-2. Aquatic Resources Delineation

2022-132.02 Reclamation District 108

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Map Contents

Study Area - 1.14 ac.

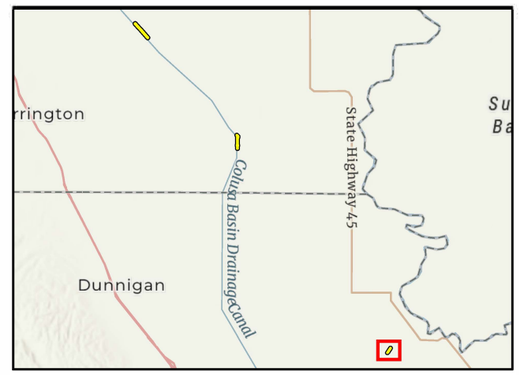
Sample Points

OHWM Transect

Photo Source: Maxar (2023)
Boundary Source: Reclamation District 108
Delineator(s): Daniel Wong
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet

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

* The acreage value for each feature has been rounded to the nearest 1/100 decimal. Summation of these values may not equal the total potential Waters of the U.S. acreage reported.



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Map Date: 11/13/2024

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 300

Figure 4.4-2. Aquatic Resources Delineation

2022-132.02 Reclamation District 108

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Ditch

Ditches are linear features that are constructed to convey storm water and/or irrigation water. ECORP mapped three ditches within the BSA. These ditches were primarily unvegetated, with the exception of Ditch-3 in the southern portion of the BSA, which contained sparsely distributed cattails (*Typha* sp.). ECORP delineated the Ordinary High Water Mark (OHWM) of Ditch-1 in Site A and Ditch-2 in Site B in the field by the presence of breaks in the bank slopes and changes in vegetation cover. ECORP delineated the OHWM of Ditch-3 at the Spoils Area in the field by the change in vegetation species, change in vegetation cover, and a break in bank slope.

4.4.1.3 Soils

Table 4.7-1, within Section 4.7 Geology and Soils of this document provides an overview of the soil series mapped within the Project area and key features of the soil series, such as hydric rating or presence of serpentine or gabbroic soil material. They are also listed below.

According to the Web Soil Survey, two soil mapping units are within the BSA (ECORP 2024b):

- 115 - Clear Lake clay, 0 to 1 percent slopes, occasionally flooded, Major Land Resource Area (MLRA) 17 (115)
- Sc - Sacramento clay, 0 to 2 percent slopes, MLRA 17 (Sc)

4.4.1.4 Special-Status Plants and Wildlife

The BSA provides habitat for a variety of wildlife species. A full list of wildlife species observed in the BSA is provided in Appendix B. A total of 15 special-status plant and wildlife species were identified as having the potential to occur within the Project Area based on the literature review and site visit. Brief descriptions of the species that have the potential to occur within the Project Area are presented below.

Plants

Parry's Rough Tarplant

Parry's rough tarplant (*Centromadia parryi* ssp. *rudis*) is not listed pursuant to either the federal or California ESAs, but is designated as a California Rare Plant Rank (CRPR) 4.2 species. This species is an herbaceous annual that occurs in vernal pools and valley and foothill grassland with alkaline and vernally mesic soils, seeps, and sometimes roadsides. Parry's rough tarplant blooms from May through October and is known to occur at elevations ranging from 0 to 330 feet above MSL. Parry's rough tarplant is endemic to California; its current range includes Butte, Colusa, Glenn, Lake, Merced, Modoc, Sacramento, San Joaquin, Solano, Stanislaus, and Yolo counties.

There are no California Natural Diversity Database (CNDDB) occurrences of Parry's rough tarplant within 5 miles of the BSA. The *Avena* spp. – *Bromus* spp. Herbaceous Semi-natural Alliance and levee roadside margins within the BSA represent marginally suitable habitat for this species. Parry's rough tarplant has a low potential to occur within the BSA.

Woolly Rose-Mallow

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

There are no CNDDB occurrences of woolly rose-mallow within 5 miles of the BSA. The Colusa Basin Drainage Canal and the ditches within the BSA represent suitable habitat for this species. Woolly rose-mallow has potential to occur within the BSA.

Reptiles

Northwestern Pond Turtle

The northwestern pond turtle (NWPT, *Actinemys marmorata*) is proposed for listing as *Threatened* pursuant to the federal ESA and is considered a Species of Special Concern (SSC) by CDFW. The range of the northwestern pond turtle in California extends from the Coast Ranges on the Oregon border southward to Marin County, throughout the lower elevations and foothills of the southern Cascades and Sierra Nevada Mountains, and within the Sacramento and San Joaquin Valleys. They can occur in a variety of waters including ponds, lakes, streams, reservoirs, rivers, settling ponds of wastewater treatment plants, and other permanent and ephemeral wetlands. However, in streams and other lotic features they generally require slack- or slow-water aquatic microhabitats. Northwestern pond turtles also require basking areas such as logs, rocks, banks, and brush piles for thermoregulation. Nesting sites for pond turtles are typically located in annual grasslands adjacent to a watercourse with little slope and hard, dry soil. Nesting habitat soils typically display high clay or silt fraction, with few nests located in sandy soils. Nests are usually within 400 meters of a watercourse, with the majority being within 50 meters of the water's edge.

There are no CNDDB occurrences of NWPT within 5 miles of the BSA. The Colusa Basin Drainage Canal and the ditches within the BSA represent suitable habitat for this species. Northwestern pond turtle has potential to occur within the BSA.

Giant Garter Snake

The giant garter snake (GGS, *Thamnophis gigas*) is listed as *Threatened* pursuant to both the California and federal ESAs. The giant garter snake is one of the most aquatic garter snakes. It is rarely found far from water and occupies habitat such as marshes and sloughs, irrigation and drainage canals, small lakes and ponds, rice agricultural fields, and low gradient streams. Giant garter snakes are most active from early spring through mid-fall, and use grassy bank-side habitats for basking and higher elevation uplands for cover and retreat from floodwaters during the inactive winter season. The GGS is endemic to the floors of the Sacramento and San Joaquin valleys of California and probably occurred historically from Butte County south to Buena Vista Lakes in Lake in Kern County.

There are 30 CNDDB occurrences of GGS within 5 miles of the BSA. The ditches within the BSA represent suitable habitat for this species. Giant garter snakes have potential to occur within the BSA.

Birds

Great Blue Heron (Nesting Colony)

Great blue heron (*Ardea herodias*) is not listed pursuant to either the federal or California ESAs, but are protected by the MBTA and California Department of Fish and Game and tracked by CDFW in the CNDDB, as are other colonial nesting water birds [e.g., great egrets (*Ardea alba*), snowy egret (*Egretta thula*)]. Great blue herons nest colonially in trees, bushes, on the ground, and artificial structure, generally near water and in places protected from predators and disturbance, such as islands. The nesting colonies may be located within a variety of vegetation communities near water.

There is one CNDDB occurrence of great blue heron within 5 miles of the BSA. In addition, a great blue heron rookery was observed within the immediate vicinity of the BSA, adjacent to Site A. The S*alix gooddingii - Salix laevigata* Forest & Woodland Alliance found at the margins of Site A and Site B along the Colusa Basin Drainage Canal represent suitable breeding habitat for this species. Great blue heron is present adjacent to the BSA.

Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) has been delisted under the federal ESA but remains listed as *Endangered* under the California ESA. It is fully protected pursuant to the California Fish and Game Code Section 3511 and the federal Bald and Golden Eagle Protection Act. Bald eagles breed at lower elevations in the northern Sierra Nevada and North Coast ranges. Bald eagles breed in forested areas adjacent to large waterbodies. Tree species used for nesting are quite variable and includes conifers (dominant where available), oaks, hickories, cottonwoods, and aspens. Nest trees are generally the largest tree available in a suitable area. Breeding activity occurs from late-February through September, with peaks in activity from March to June (ECORP 2024b).

There are no CNDDB occurrences of bald eagle within 5 miles of the BSA. The Colusa Basin Drainage Canal and agricultural fields surrounding the BSA represent suitable winter foraging habitat for this species. Bald eagles have potential to occur within the BSA.

Swainson's Hawk

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

Swainson's hawks nest in tall trees in a variety of wooded communities including riparian, oak woodland, roadside landscape corridors, urban areas, and agricultural areas, among others. Foraging habitat includes open grassland, savannah, low-cover row crop fields, and livestock pastures. In the Central Valley, Swainson's hawks typically feed on a combination of California vole (*Microtus californicus*), California

ground squirrel (*Otospermophilus beecheyi*), ring-necked pheasant (*Phasianus colchicus*), many passerine birds, and grasshoppers (*Melanoplus* species). Swainson's hawks are opportunistic foragers and will readily forage in association with agricultural mowing, harvesting, discing, and irrigating. The removal of vegetative cover by such farming activities results in more readily available prey items for this species.

There are 53 CNDDB occurrences of Swainson's hawk within 5 miles of the BSA. The S*alix gooddingii - Salix laevigata* Forest & Woodland Alliance found at the margins of Site A and Site B, along the Colusa Basin Drainage Canal, represent suitable breeding habitat for this species. Swainson's hawk has potential to occur within the BSA.

Burrowing Owl

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

There are no CNDDB occurrences of burrowing owl within 5 miles of the BSA. The banks of the ditches and sides of the Colusa Basin Drainage Canal levee represent marginally suitable burrowing habitat for this species. Burrowing owls have low potential to occur within the BSA (ECORP 2024b).

Merlin

The merlin (*Falco columbarius*) is not listed pursuant to either the California or federal ESAs but is a CDFW Watch List species. This falcon breeds in Canada and Alaska and occurs in California as a migrant and during the nonbreeding season (September through April). Foraging habitat in winter includes open forests, grasslands, and tidal flats.

There are no CNDDB occurrences of merlin within 5 miles of the BSA. The S*alix gooddingii - Salix laevigata* Forest & Woodland Alliance found at the margins of Site A and Site B, along the Colusa Basin Drainage Canal, represent suitable wintering habitat for this species. Merlin has potential to occur within the BSA.

Yellow-Billed Magpie

The yellow-billed magpie (*Pica nuttalli*) is not listed pursuant to either the California or federal ESAs but is considered a USFWS BCC. This endemic species is a yearlong resident of the Central Valley and Coast Ranges from San Francisco Bay to Santa Barbara County. Yellow-billed magpies build large, bulky nests in trees in a variety of open woodland habitats, typically near grassland, pastures, or cropland. Nest building begins in late January to mid-February, which may take up to 6 to 8 weeks to complete, with eggs laid from April through May, and fledging from May through June. The young leave the nest about 30 days

after hatching. Yellow-billed magpies are highly susceptible to West Nile Virus, which may have been the cause of death to thousands of magpies during 2004-2006.

There are no CNDDB occurrences of yellow-billed magpie within 5 miles of the BSA. The S*alix gooddingii - Salix laevigata* Forest & Woodland Alliance found at the margins of Site A and Site B, along the Colusa Basin Drainage Canal, represent suitable breeding habitat for this species. Yellow-billed magpie has potential to occur within the BSA.

Oak Titmouse

Oak titmouse (*Baeolophus inornatus*) is not listed or protected under either state or federal ESAs but is considered a USFWS BCC. Oak titmouse breeding range includes southwestern Oregon south through California's Coast, Transverse, and Peninsular ranges, western foothills of the Sierra Nevada, into Baja California; they are absent from the humid northwestern coastal region and the San Joaquin Valley. They are found in dry oak or oak-pine woodlands but may also use scrub oaks or other brush near woodlands. Nesting occurs during March through July (ECORP 2024b).

There are no CNDDB occurrences of oak titmouse within 5 miles of the BSA. The *Salix gooddingii - Salix laevigata* Forest & Woodland Alliance found at the margins of Site A and Site B, along the Colusa Basin Drainage Canal, represent suitable breeding habitat for this species. Oak titmouse has potential to occur within the BSA.

Song Sparrow "Modesto" Population

The song sparrow (*Melospiza melodia*) is considered one of the most polytypic songbirds in North America. The subspecies *Melospiza melodia heermanni* includes as synonyms *M. m. mailliardi* (the *Modesto song sparrow*) and *M. m. cooperi*. The *Modesto song sparrow* is not listed and protected pursuant to either the California or federal ESAs but is considered a CDFW SSC. The subspecies *M. m. heermanni* can be found in central and southwestern California to northwestern Baja California. Song sparrows in this group may have slight morphological differences but they are genetically indistinguishable from each other. The *Modesto song sparrow* occurs in the Central Valley from Colusa County south to Stanislaus County, and east of the Suisun Marshes. Nesting habitat includes riparian thickets and freshwater marsh communities, with nesting occurring from April through June (ECORP 2024b).

There are no CNDDB occurrences of song sparrow within 5 miles of the BSA. The emergent vegetation found at the margins of the Colusa Basin Drainage Canal, ditches, and agricultural fields represent suitable breeding habitat for this species. Song sparrow has potential to occur within the BSA.

Bullock's Oriole

The Bullock's oriole (*Icterus bullockii*) is not listed pursuant to either the California or federal ESAs but is currently a BCC according to the USFWS. In California, Bullock's orioles are found throughout the state except the higher elevations of mountain ranges and the eastern deserts. They are found in riparian and oak woodlands where nests are built in deciduous trees, but may also use orchards, conifers, and eucalyptus trees. Nesting occurs from March through July (ECORP 2024b).

There are no CNDDB occurrences of Bullock's oriole within 5 miles of the BSA. The S*alix gooddingii - Salix laevigata* Forest & Woodland Alliance found at the margins of Site A and Site B, along the Colusa Basin Drainage Canal, represent suitable breeding habitat for this species. Bullock's oriole has potential to occur within the BSA.

Mammals

Pallid Bat

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

There are no CNDDB occurrences of pallid bat within 5 miles of the BSA. The S*alix gooddingii - Salix laevigata* Forest & Woodland Alliance found at the margins of Site A and Site B, along the Colusa Basin Drainage Canal, represent suitable roosting habitat for this species. Pallid bat has potential to occur within the BSA.

Western Red Bat

The western red bat (*Lasiurus frantzii*) is not listed pursuant to either the California or federal ESAs; however, this species is considered an SSC by CDFW. The western red bat is easily distinguished from other western bat species by its distinctive red coloration. This species is broadly distributed with its range extending from southern British Columbia in Canada through Argentina and Chile in South America, and including much of the western U.S. This solitary species day roosts primarily in the foliage of trees or shrubs in edge habitats bordering streams or open fields, in orchards, and occasionally urban areas. They may be associated with intact riparian habitat, especially with willows, cottonwoods, and sycamores. This species may occasionally utilize caves for roosting as well. The western red bat feeds on a variety of insects and generally begins to forage 1 to 2 hours after sunset. This species is considered highly migratory; however, the timing of migration and the summer ranges of males and females may be different.

There are no CNDDB occurrences of western red bat within 5 miles of the BSA. The S*alix gooddingii - Salix laevigata* Forest & Woodland Alliance found at the margins of Site A and Site B, along the Colusa Basin Drainage Canal, represent suitable roosting habitat for this species. Western red bat has potential to occur within the BSA.

4.4.1.5 Wildlife Movement Corridors

According CNDDB, there are no California essential habitat corridors within the BSA. During the site assessment, ECORP observed great blue heron rookeries within the immediate vicinity and southwest of Site A. The riparian woodland within the Colusa Basin Drainage Canal provides suitable habitat for heron and egret rookeries.

4.4.1.6 Critical Habitat and Essential Fish Habitat

There is no designated critical habitat mapped within the BSA.

Based on the literature review, Essential Fish Habitat for steelhead (*Oncorhynchus mykiss irideus*) and Chinook salmon (*Oncorhynchus tshawytscha*) may be present in the *El Dorado Bend, California* 7.5-minute quadrangle. However, there is no habitat for special-status fish within the BSA because the outlet of the Colusa Basin Drainage Canal into the Sacramento River is dammed at Knights Landing, California.

4.4.2 Regulatory Framework

4.4.2.1 Federal Regulations

Federal Endangered Species Act

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

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the United States and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. The protections of the MBTA extend to disturbances that result in abandonment of a nest with eggs or young. The USFWS may issue permits to qualified applicants as authorized by the MBTA for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes

(rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits.

Bald and Golden Eagle Protection

The Bald and Golden Eagle Protection Act of 1940 (as amended) provides for the protection of bald eagle and golden eagle by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit [16 USC 668(a); 50 CFR 22]. The USFWS may authorize take of bald eagles and golden eagles for activities where the take is associated with, but not the purpose of, the activity and cannot practicably be avoided (50 CFR 22.26).

Magnuson-Stevens Act

Essential Fish Habitat (EFH) was defined by the U.S. Congress in the 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act, or Magnuson-Stevens Act, as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity." Implementing regulations clarified that waters include all aquatic areas and their physical, chemical, and biological properties; substrate includes the associated biological communities that make these areas suitable for fish habitats, and the description and identification of EFH should include habitats used at any time during the species' life cycle. EFH includes all types of aquatic habitat, such as wetlands, coral reefs, sand, seagrasses, and rivers.

Federal Clean Water Act

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

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

The U.S. Environmental Protection Agency also has authority over wetlands and may override a USACE permit.

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

4.4.2.2 State Regulations

California Fish and Game Code - California Endangered Species Act

The California ESA (California Fish and Game Code Sections 2050-2116) generally parallels the main provisions of the federal ESA, but unlike its federal counterpart, the California ESA applies the take prohibitions to species proposed for listing (called *candidates* by the state). Section 2080 of the California Fish and Game Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. *Take* is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Section 2081 allows CDFW to authorize incidental take permits if species-specific minimization and avoidance measures are incorporated to fully mitigate the impacts of the Project.

California Fish and Game Code - Fully Protected Species

The State of California first began to designate species as *fully protected* prior to the creation of the federal and California ESAs. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the state and/or federal ESAs. Previously, the regulations that implement the Fully Protected Species Statute (California Fish and Game Code Sections 4700 for mammals, 3511 for birds, 5050 for reptiles and amphibians, and 5515 for fish) provided that fully protected species may not be taken or possessed at any time. However, on July 10, 2023, Senate Bill 147 was signed into law, authorizing CDFW to issue take permits under the California ESA for fully protected species for qualifying projects through 2033. Qualifying projects include:

- a maintenance, repair, or improvement project to the State Water Project, including existing infrastructure, undertaken by the Department of Water Resources;
- a maintenance, repair, or improvement project to critical regional or local water agency infrastructure;
- a transportation project, including any associated habitat connectivity and wildlife crossing project, undertaken by a state, regional, or local agency, that does not increase highway or street capacity for automobile or truck travel;
- a wind project and any appurtenant infrastructure improvement, and any associated electric transmission project carrying electric power from a facility that is located in the State to a point of junction with any California based balancing authority; or
- a solar photovoltaic project and any appurtenant infrastructure improvement, and any associated electric transmission project carrying electric power from a facility that is located in the State to a point of junction with any California-based balancing authority.

CDFW may also issue licenses or permits for take of these species for necessary scientific research or live capture and relocation and may allow incidental take for lawful activities carried out under an approved Natural Community Conservation Plan within which such species are covered.

California Fish and Game Code – Native Plant Protection Act

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

California Fish and Game Code- Special Protections for Birds

Sections 3503, 3513, and 3800 of the California Fish and Game Code specifically protect birds. Section 3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird. Subsection 3503.5 prohibits the take, possession, or destruction of any birds in the orders Strigiformes (owls) or Falconiformes (hawks and eagles), as well as their nests and eggs. Section 3513 prohibits the take or possession of any migratory nongame bird as designated in the MBTA. Section 3800 states that, with limited exceptions, it is unlawful to take any nongame bird, defined as all birds occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds. These provisions, along with the federal MBTA, serve to protect all nongame birds and their nests and eggs, except as otherwise provided in the code.

California Fish and Game Code – Lake or Streambed Alteration Agreements

Section 1602 of the California Fish and Game Code requires that a Notification of Lake or Streambed Alteration be submitted to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." The notification must incorporate proposed measures to protect affected fish and wildlife resources. CDFW may suggest additional protective measures during their review. A Lake or Streambed Alteration Agreement (LSAA) is the final proposal mutually agreed upon by CDFW and the applicant. Projects that require an LSAA often also require a permit from the USACE under Section 404 of the CWA. The conditions of the Section 404 permit and the LSAA frequently overlap in these instances.

Porter-Cologne Water Quality Act

The RWQCB implements water quality regulations under the federal CWA and the Porter-Cologne Water Quality Act. These regulations require compliance with the National Pollutant Discharge Elimination System (NPDES), including compliance with the California Storm Water NPDES General Construction Permit for discharges of storm water runoff associated with construction activities. General Construction Permits for projects that disturb 1 or more acres of land require development and implementation of a Storm Water Pollution Prevention Plan. Under the Porter-Cologne Water Quality Act, the RWQCB also regulates actions that would involve "discharging waste, or proposing to discharge waste, within any

region that could affect the water of the state" (Water Code 13260(a)). Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code 13050 (e)). The RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into Waters of the State, that are not regulated by the USACE due to a lack of connectivity with a navigable water body. The RWQCB may require issuance of Waste Discharge Requirements for these activities.

California Environmental Quality Act

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

CEQA Significance Criteria

Sections 15063-15065 of the CEQA Guidelines address how an impact is identified as significant. Generally, impacts to listed (i.e., rare, threatened, or endangered) species are considered significant. Assessment of *impact significance* to populations of non-listed species (e.g., Species of Special Concern) usually considers the proportion of the species' range that will be affected by a project, impacts to habitat, and the regional and population level effects.

Section 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines. Pursuant to Appendix G, impacts to biological resources would normally be considered significant if the Project would:

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS;
- have a substantial adverse effect on federally protected Waters of the U.S. including wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- conflict with the provisions of an adopted HCP, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.

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

Species of Special Concern

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

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

SSC are typically associated with threatened habitats. Projects that result in substantial impacts to SSC may be considered significant under CEQA.

USFWS Birds of Conservation Concern

The 1988 amendment to the Fish and Wildlife Conservation Act mandates the USFWS "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under ESA." To meet this requirement, the USFWS published a list of BCC for the U.S. The list identifies the migratory and nonmigratory bird species (beyond those already designated as federally threatened or endangered) that represent USFWS' highest conservation priorities. Depending on the policy of the lead agency, projects that result in substantial impacts to BCC may be considered significant under CEQA (ECORP 2024b).

Watch List Species

The CDFW maintains a list consisting of taxa that were previously designated as "Species of Special Concern" but no longer merit that status, or which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status.

Depending on the policy of the lead agency, projects that result in substantial impacts to species on the Watch List may be considered significant under CEQA.

California Rare Plant Ranks

The California Native Plant Society (CNPS) maintains the *Rare Plant Inventory* (ECORP 2024b), which provides a list of plant species native to California that are threatened with extinction, have limited distributions, or low populations. Plant species meeting one of these criteria are assigned to one of six CRPRs. The rank system was developed in collaboration with government, academic, non-governmental organizations, and private sector botanists, and is jointly managed by CDFW and the CNPS. The CRPRs are currently recognized in the CNDDB. The following are definitions of the CNPS CRPRs:

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

Additionally, the CNPS has defined Threat Ranks that are added to the CRPR as an extension. Threat Ranks designate the level of threat on a scale of 0.1 through 0.3, with 0.1 being the most threatened and 0.3 being the least threatened. Threat Ranks are generally present for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California), and some species ranked 3, which lack threat information, do not typically have a Threat Rank extension. The following are definitions of the CNPS Threat Ranks:

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

Factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Rank; and differences in Threat Ranks do not constitute additional or different protection. Depending on the policy of the lead agency, substantial impacts to plants ranked 1A,

1B, 2A, or 2B are typically considered significant under CEQA Guidelines Section 15380. Significance under CEQA is typically evaluated on a case-by-case basis for plants ranked 3 or 4.

Sensitive Natural Communities

Sensitive natural communities are vegetation communities that are imperiled or vulnerable to environmental effects of projects. CDFW maintains the California Natural Community List, which provides a list of vegetation alliances, associations, and special stands as defined in *A Manual of California Vegetation Online*, along with their respective state and global rarity ranks, if applicable. Natural communities with a state rarity rank of S1, S2, or S3 are considered sensitive natural communities. Depending on the policy of the lead agency, impacts to sensitive natural communities may be considered significant under CEQA.

Wildlife Movement Corridors and Nursery Sites

Impacts to wildlife movement corridors or nursery sites may be considered significant under CEQA. As part of the California Essential Habitat Connectivity Project, CDFW and California Department of Transportation maintain data on Essential Habitat Connectivity areas. This data is available in the CNDDB. The goal of this project is to map large intact habitat or natural landscapes and potential linkages that could provide corridors for wildlife. In urban settings, riparian vegetated stream corridors can also serve as wildlife movement corridors. Nursery sites include but are not limited to concentrations of nest or den sites such as heron rookeries, bat maternity roosts, and mule deer critical fawning areas. These data are available through CDFW's Biogeographic Information and Observation System database or as occurrence records in the CNDDB and are supplemented with the results of the field reconnaissance.

4.4.3 Biological Resources (IV) Environmental Checklist and Discussion

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

Less Than Significant Impact With Mitigation Incorporated.

Potential impacts due to Project implementation include temporary disturbance associated with the use of excavators to remove and reshape the levee bank in slope stability repair areas. As such, the Project would potentially have a significant impact, either directly or through habitat modifications, on special-status species identified by CDFW, USFWS, and NMFS. However, no permanent effects on Critical Habitat or Essential Fish Habitat as identified by National Marine Fisheries Service will occur. Impacts by species or habitat group are summarized below, along with corresponding mitigation measures that will reduce

impacts to less than significant levels. Therefore, this impact is less than significant with mitigation incorporated.

4.4.3.1 Impacts to Special-Status Plants

The Project Area supports potential habitat for special-status plants, as identified in Table 3 within Appendix B. No special-status plants were found during the BRA or aquatic resources delineation survey; however, protocol-level surveys have not been conducted. If a special-status plant is found within the Project Area, Project impacts could include damage or loss of individual plants, loss of occupied habitat, and indirect impacts such as disturbance from human encroachment and changes in habitat quality due to alteration of hydrology, erosion, and transport of soil, debris or pollutants into occupied habitat from adjacent Project Areas. Implementation of mitigation measures BIO-1 would avoid or minimize potential effects to special-status plants and reduce impacts to less than significant levels.

4.4.3.2 Impacts to Special-Status Reptiles

The upland areas above the OHWM along the ditches within Site A, Site B, and the Spoils Area provide upland habitat for nesting Northwestern pond turtle and upland habitat for Giant Garter Snake. The aquatic areas below the OHWM along the ditches within Site A, Site B, and the Spoils Area provide suitable aquatic habitat for both species. Northwestern pond turtle nests typically occur within 50 to 400 meters of aquatic habitat and are often found in the annual grasslands, such as the *Avena* spp. – *Bromus* spp. Herbaceous Semi-Natural Alliance found within the BSA. This vegetation community above the ditches within the BSA also provides non-aquatic basking sites for giant garter snakes and protection from flooding during the winter season.

Therefore, as the Northwestern pond turtle and the giant garter snake both have the potential to occur within the Colusa Basin Drainage Canal, implementation of mitigation measure BIO-2 and BIO-3, would be required which would minimize potential impacts to the Northwestern pond turtle and the giant garter snake to less than significant levels.

4.4.3.3 Special-Status Birds

The S*alix gooddingii - Salix laevigata* Forest & Woodland Alliance mapped at along western margins of Site A and Site B provide suitable tree-nesting habitat for special-status birds species. In addition, the banks of ditches and the *Avena* spp. – *Bromus* spp. Herbaceous Semi-Natural Alliance observed within the BSA provide habitat for ground-nesting or burrowing bird species.

Multiple species of birds protected under the Migratory Bird Treaty Act (MBTA) were observed within the BSA during the field reconnaissance site visit; however, nesting surveys were not conducted. Project activities could potentially cause the injury or mortality of adults, young, or eggs of birds and raptors protected under the federal MBTA; or potentially cause indirect impacts such as disturbance from human encroachment and changes in habitat quality due to alteration of vegetation. Implementation of mitigation measure BIO-4 would minimize the impacts of the Project on potential nesting habitat for

special-status birds, including raptors, and other common birds protected by the MBTA, thus reducing impacts to a less than significant level.

Swainson's hawk has the potential to occur within and immediately adjacent to the BSA. To avoid potential impacts to Swainson's hawk, implementation of mitigation measure BIO-5 would be required to reduce potential impacts to a less than significant level.

Although no burrowing owls or their signs (e.g., white-wash, pellets, or feathers) were observed within the BSA, suitable burrows were observed at Site A and Site B of the Proposed Project. Therefore, implementation of mitigation measure BIO-6 would be required to reduce potential impacts to a less than significant level.

4.4.3.4 Special-Status and Day-Roosting Bats

The riparian vegetation found along the western margins of Site A and Site B supports potential roosting habitat for special-status bat species and other day-roosting bat species. Although bat species were not observed within the BSA, targeted surveys for these species were not conducted. Although the Project does not result in the removal of trees, Project activities could potentially cause indirect impacts, such as disturbance from human encroachment and changes in habitat quality due to alteration of vegetation. Therefore, in order to ensure that impacts to pallid bats, day roosting bats, and the western red bat remain at a less than significant impact, the Proposed Project shall incorporate mitigation measure BIO-7 and BIO-8. Implementation of mitigation measure would minimize the potential for effects to special-status mammals.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐

Less Than Significant Impact.

The western margins of Site A and Site B consist of a S*alix gooddingii - Salix laevigata* Forest & Woodland Alliance. The Proposed Project activities will occur primarily in the *Avena* spp. – *Bromus* spp. Herbaceous Semi-Natural Alliance and will not involve the removal of riparian vegetation. Therefore, the Project will not have substantial adverse effects on the riparian community and any impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐

Less Than Significant Impact With Mitigation Incorporated.

Aquatic resources have been mapped within the BSA, as shown in Figure 4.4-2. Project implementation would temporarily disturb the banks of the levee during proposed slope stability repair measures. Additionally, placement of soil for slope stability control may result in permanent impacts to waters of the U.S./state. Implementation of erosion control measures and standard construction Best Management Practices (BMPs) in addition to mitigation measure BIO-9, would reduce impacts to aquatic resources to less than significant levels with mitigation incorporated.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐

Less Than Significant Impact With Mitigation Incorporated.

As mentioned above in Section 4.4.1, Biological Resources Environmental Setting, based on the literature review, Essential Fish Habitat for steelhead (and Chinook salmon may be present in the *El Dorado Bend, California* 7.5-minute quadrangle. However, there is no habitat for special-status fish within the Project area because the outlet of the Colusa Basin Drainage Canal into the Sacramento River is dammed at Knights Landing, California.

The levee and associated vegetation, trees, and banks within the Project Area provide migratory opportunities for wildlife. Establishment of the staging areas and operation of equipment is likely to temporarily disturb and displace wildlife from portions of the Project Area. Some wildlife, such as birds or nocturnal species, are likely to continue to use the habitats opportunistically for the duration of construction. Once construction is complete, wildlife movements are expected to resume.

Great blue heron rookeries were observed within the Colusa Basin Drainage Canal adjacent to Site A. To ensure that potential impacts to this species are less than significant, implementation of mitigation measure BIO-10 would be required.

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

Less Than Significant Impact.

No trees are proposed to be removed as part of Project implementation. The Project will not conflict with a Colusa County or Yolo County policy or ordinance protecting biological resources, including tree ordinances. Additionally, the Proposed Project would not conflict with the Yolo County Woodland Conservation and Enhancement Plan. Any impacts would be less than significant.

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

Less Than Significant Impact.

The Project will not conflict with a Colusa County or Yolo County policy or ordinance protecting biological resources, including tree ordinances. Additionally, the Proposed Project would not conflict with the Yolo County Woodland Conservation and Enhancement Plan. Any impacts would be less than significant.

4.4.4 Mitigation Measures

BIO-1: Special-Status Plant Species

- Where feasible, Project-related activities shall be restricted to previously developed or disturbed areas to avoid disturbance of habitats that may support special-status plants.
- A special-status plant survey was conducted for the Project according to CDFW, CNPS, and USFWS protocols, and no special-status plant species were observed during the survey.
- However, if unanticipated special-status plants are identified onsite, the Project shall be modified to the extent feasible to prevent disturbance or loss of special-status plants. No-disturbance buffers shall be established around sensitive plant populations to be preserved in or adjacent to the Project Area. A 25-foot buffer should be maintained between project activities and sensitive plant populations, unless otherwise determined by a qualified biologist. Buffer distances may vary between species depending on listing status, rarity, and other factors. Buffer areas

will be clearly demarcated in the field, and no construction or ground-disturbing activities will occur within the boundaries of the delineated area.

- If a special-status plant species is found and avoidance is not feasible, additional measures may be developed in consultation with CDFW, USFWS and/or the CEQA Lead Agency.
- If a state or federally listed threatened or endangered plant or a plant that is a candidate for state listing is found onsite, the applicant shall consult with CDFW and/or USFWS, as applicable, to determine appropriate avoidance and minimization measures. If the plants cannot be avoided, an incidental take permit and compensatory mitigation may be required.

BIO-2: Northwestern Pond Turtle

- If northwestern pond turtle becomes listed as threatened pursuant to the federal ESA prior to or during the course of construction and Project activities have the potential for "take" of an individual or nest, then the Project proponent will initiate Section 7 consultation with the USFWS and obtain a Biological Opinion. The Project will implement the measures within the Biological Opinion.
- A qualified biologist will conduct a preconstruction survey for northwestern pond turtle two weeks prior to and 48 hours before commencement of ground-disturbing activities within 160 feet of aquatic habitat and prior to in-water work activities. The surveys will be timed to coincide with the time of day when turtles are most likely to be active and visible (during the cooler portion of the day, 8:00 a.m. to 12:00 p.m. during spring, summer, and late summer). Prior to conducting presence/absence surveys, the biologist will locate the microhabitats for turtle basking (i.e., logs, rocks, brush thickets) and determine a location to quietly observe turtles. Each survey will include a wait time after arriving onsite to allow startled turtles to return to open basking areas and an observation period. If northwestern pond turtle is observed, a northwestern pond turtle management, monitoring, and relocation plan will be prepared prior to commencement of construction in suitable habitat.
- Implementation of the giant garter snake exclusion recommended measures would contribute to avoiding and minimizing potential impacts to northwestern pond turtles. A qualified biologist will include northwestern pond turtle in their exclusion fence clearance surveys.
- If a northwestern pond turtle is observed during construction activities, the construction activities will be temporarily halted to allow a qualified biologist the opportunity to hand capture the individual and relocate them to suitable aquatic habitat that will not be disturbed by the Project. The relocation effort and location will be documented in a report and submitted to CDFW and a CNDDB report will be completed within 60 days of the observation to document the occurrence. If northwestern pond turtle eggs are unearthed, construction activities will be halted within 50 feet of the observation, a light soil layer will immediately be placed over

the eggs, and CDFW will immediately be consulted on how to proceed with a nest relocation or transportation to wildlife rehabilitation center.

BIO-3: Giant Garter Snake

- Consult with USFWS and CDFW and if necessary, obtain a USFWS Biological Opinion and an Incidental Take Permit 2081, pursuant to Section 2080 of the California Fish and Game Code, or Consistency Determination.
- A giant garter snake handling and relocation plan outlining appropriate procedures for these activities will be prepared for the Project and provided to USFWS and CDFW (the Agencies) for review and approval prior to commencement of construction. The generalized content is anticipated to include conditions under which the biologist may order work stop and re-start; approved monitoring equipment and processing procedures, and procedures for treating an injured animal, including approved veterinary treatment facilities and their location.
- In addition to the mitigation measures listed herein, if compensatory mitigation is required as a result of Project impacts, it will be purchased for the permanent impacts to giant garter snake habitat if permanent impacts are proposed, as identified in the Biological Assessment report and agreeable to the Agencies. The mitigation credits will be purchased from a CDFW and USFWS approved mitigation bank. The transaction will take place through a purchase and sale agreement, and funds must be transferred within 30 days, and prior to the initiation of any construction activities that would result in direct impacts to giant garter snake.
- Prior to initiation of ground disturbing work, the District will submit to the Agencies for approval the name and resume of an individual who will act as the Designated Biologist. The Designated Biologist shall be responsible for monitoring construction activities for compliance with measures to minimize and fully mitigate or avoid the incidental take of GGS and its associated habitat. Resumes for all biological staff who will be acting as biological monitors will also be submitted to the agencies for approval.
- Construction activities will be conducted between May 1 and October 1, if possible, when direct mortality will be lessened because the snakes can move to avoid danger. If work is not able to occur during the active season, the areas scheduled for ground disturbance/fill will be excluded with silt fence containing one-way exits for at least two weeks prior to the inactive season, to reduce the likelihood of individuals wintering within the area.
- If required by the Agencies, prior to ground disturbing activities, giant garter snake exclusion fencing will be installed around the work area. If exclusion fencing is installed, it will be installed during the giant garter snake active period between May 1st and October 1st. The exclusion fencing shall be installed under the supervision of a qualified biologist to ensure the fencing is installed in a manner that excludes giant garter snake from the work area. The biologist will conduct weekly fence and

environmental compliance checks and immediately report any deficiencies to the superintendent.

- Twenty-four hours prior to the commencement of construction activities, the Project Area shall be surveyed by a biologist approved by the agencies to document the presence or absence of GGS. The biologist will provide the Agencies with a written report that adequately documents the preconstruction survey. If giant garter snake is observed during the preconstruction survey, the report will be provided to the Agencies within 24-hours of commencement of construction activities. The Project will be re-inspected by the monitoring biologist whenever a lapse of two weeks or greater has occurred.
- Construction personnel will participate in a Worker Environmental Awareness Training program prior to the initiation of construction activities. The training will educate all workers and site personnel about identification of GGS and appropriate actions to be taken in the event giant garter snake are observed during construction. Under this training, information regarding the life history of giant garter snake identification of aquatic and upland GGS habitat within the Project Area, a description of activities that qualify as take of the species including harassment, destruction of habitat, and death of an individual.
- During construction operations, excavation will be accomplished by equipment located and operated outside of the aquatic resources as much as feasible. Stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and all operations will be confined to the minimal area necessary. All Project related vehicles will observe a 20-mile-per-hour speed limit within construction areas, except on existing paved roads where they will adhere to the posted speed limit. All construction related holes will be covered to prevent entrapment of individuals. All Project personnel shall look beneath parked vehicles and construction equipment for snakes prior to their movement.
- If required by the Agencies, a qualified biologist will conduct daily visual surveys of the work area within GGS aquatic or upland habitat prior to any earthmoving activities to verify there are no GGS in the area.
- If giant garter snake is encountered, the applicant or its consultant shall halt construction until the snake has left the area under its own volition and notify the Agencies immediately to determine the appropriate procedures related to the collection or relocation of the snake. A report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the snake, within one business day. The biologist will be required to report any take of listed species to the Agencies immediately by telephone and written letter or email within one day of the incident.
- Standard construction BMPs will be implemented to minimize potential for erosion and sedimentation. BMP materials shall not contain monofilament and or have fused

joints that provide an entanglement risk to wildlife. Temporarily disturbed habitat will be revegetated with a RD 108 approved seed mix at the completion of construction.

- If GGS is encountered, a CNDDB report will be completed within 60 days of the encounter.
- After completion of construction activities, the applicant will remove any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Restoration work includes such activities as revegetating the banks of the ditches with RD 108 approved seed mix.
- If work must occur during the giant garter snake inactive period (i.e., between October 2 and April 30), when snakes are more vulnerable to injury or mortality, the following additional protective measures will be implemented, if required by the Agencies.
    - Areas of suitable habitat that are scheduled for excavation or ground disturbance/fill will be excluded with giant garter snake exclusion fencing with one-way exits for at least two weeks prior to the inactive season (or the drop off in warm temperatures), to reduce the likelihood of brumation by individuals within the area.
    - An Agency approved monitoring biologist will conduct on-site daily monitoring for the duration of any ground-disturbing activities (e.g., grading, or other earth-moving activities) after October 1.
    - All vegetation within 200 feet of aquatic habitat will be cleared prior to the giant garter snake inactive season (i.e., vegetation clearing will be completed by October 1 for work the following winter).

BIO-4: Nesting Birds Preconstruction Survey

- A qualified biologist shall conduct a preconstruction survey for nesting raptors, within the Project Area and a 500-foot buffer, within 14 days of commencement of Project activities (can be conducted concurrently with nesting bird surveys, as appropriate). If an active nest is located, a no-disturbance buffer will be established as determined by the biologist and maintained until a qualified biologist determines the young have fledged and are no longer reliant upon the nest for survival.
- A qualified biologist shall conduct a preconstruction nesting bird (non-raptor) survey (can be conducted concurrently with raptor surveys, as appropriate) of all areas associated with construction activities, and a 100-foot buffer around these areas, within 14 days prior to commencement of construction. If active nests are found, a no-disturbance buffer around the nest shall be established. The buffer distance shall be established by a qualified biologist. The buffer shall be maintained until the fledglings are capable of flight and become independent of the nest, to be determined by a qualified biologist. Once the young are independent of the nest, no further measures are necessary.

BIO-5: **Swainson's Hawk Preconstruction Survey.** If Project activities are scheduled during the Swainson's hawk nesting season (March 1 to August 31), then prior to beginning work on the Project, a qualified biologist shall survey for Swainson's hawk nesting activity. The survey area shall include a 0.25-mile distance surrounding the Project Area. The qualified biologist shall conduct surveys according to the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (ECORP 2024b) or, if proposing an alternate survey methodology, shall submit the proposed survey timing and methods to CDFW for review and written approval prior to initiation of surveys. Survey results shall be submitted to CDFW for review. If Swainson's hawk nesting activity is observed during the survey, then the survey results shall be submitted to CDFW for review and acceptance prior to starting Project activities. If the qualified biologist identifies nesting Swainson's hawks, then they shall recommend a no disturbance buffer, and the contractor shall implement the buffer under the supervision of a qualified biologist. Project activities shall be prohibited within the no disturbance buffer between March 1 to August 31, unless otherwise approved in writing by CDFW, which may include consultation pursuant to California ESA and an Incidental Take Permit, or a qualified biologist determining that the nest is no longer active. If there is a lapse in Project-related work of 14 days or longer, then an additional survey shall be conducted prior to resuming Project activities.

BIO-6: **Burrowing Owls Preconstruction Survey.** A preconstruction survey for nesting burrowing owl will be conducted by a qualified biologist within 14 days prior to commencement of Project activities within the BSA and a 250-foot buffer. Surveys shall be conducted at appropriate times and in appropriate weather conditions to maximize detection. If active burrowing owl burrows are found, an avoidance buffer will be immediately established, and an avoidance plan will be prepared in consultation with CDFW prior to the commencement of any ground-disturbing activities.

BIO-7: **Pallid Bat**

- A qualified bat biologist will conduct a bat habitat assessment for suitable bat roosting habitat prior to any construction activities. The habitat assessment should be conducted one year prior to the initiation of construction activities, if feasible, and no less than 30 days prior to the initiation of construction activities. If no suitable roosting habitat is identified, no further measures are necessary. If suitable roosting habitat and/or signs of bat use are identified during the assessment, the roosting habitat should be avoided to the extent possible.
- If avoidance of any identified bat roosting habitat is not feasible, then a qualified bat biologist will conduct an emergence and/or preconstruction survey for roosting bats. Emergence surveys shall not be conducted during the bat inactive/hibernation period (typically October 15 through March 1, or when nighttime low temperatures are 45 degrees Fahrenheit or lower and rain is not over ½ inch in 24 hours), as bats are not detectable using emergence survey methods during their inactive period. If a maternity roost is located, an avoidance buffer will be established in consultation

with CDFW until after the maternity season or until a qualified biologist has determined the roost is no longer active.

BIO-8: Western Red Bat

- If a qualified bat biologist identified trees or shrubs within the Project Area that may provide suitable day-roosting habitat for western red bat, the roosting habitat should be avoided to the extent possible.
- If avoidance of the identified bat roosting habitat is not feasible, then a qualified bat biologist will conduct an emergence and/or preconstruction survey for roosting bats. Emergence surveys shall not be conducted during the bat inactive/hibernation period (typically October 15 through March 1, or when nighttime low temperatures are 45 degrees Fahrenheit or lower and rain is not over ½ inch in 24 hours), as bats are not detectable using emergence survey methods during their inactive period. If a maternity roost is located, an avoidance buffer will be established in consultation with CDFW until after the maternity season or until a qualified biologist has determined the roost is no longer active.

BIO-9: Aquatic Resources

- A permit authorization to fill wetlands under the Section 404 of the federal Clean Water Act (Section 404 Permit) must be obtained from USACE prior to discharging any dredged or fill materials into any waters of the U.S. Final mitigation measures will be developed as part of the Section 404 Permit process to ensure no-net-loss of wetland function and values.
- A permit authorization from the RWQCB pursuant to Section 401 of the Clean Water Act and the California Porter-Cologne Water Quality Act must be obtained prior to the discharge of material in an area that could affect waters of the U.S./state. Mitigation requirements for discharge to waters of the U.S./state will be developed in consultation with the RWQCB.

BIO-10: Great Blue Heron

- In order to avoid potential impacts to the rookeries, Project activities should work outside the breeding season for great blue heron (February-July). If avoidance is unfeasible, a no-disturbance buffer should be established around the rookeries sites, and CDFW and USFWS should be consulted about implementing appropriate avoidance and minimization measures.
- A monitoring and management plan should be developed in consultation with CDFW, to determine if additional mitigation measures are required.

4.5 Cultural Resources

ECORP prepared a Cultural Resources Inventory Report for the RD 108 Project (ECORP 2024c, Appendix C) to determine if cultural resources were present in or adjacent to the Project Area and assess the sensitivity of the Project Area for undiscovered or buried cultural resources. The cultural context of the Project Area, including regional and local prehistory, ethnography, and regional and Project Area histories can be found

in the report in Appendix C. Due to confidentiality guidelines, Appendix C is included under separate cover.

4.5.1 Environmental Setting

The Proposed Project is situated in the northern Sacramento Valley within the Colusa Basin area. The Site A and Site B portions of the Project area are both within the Colusa Basin Drainage Canal East Levee in Colusa County, and the spoils area is located along the bank of an unnamed canal between CR-108 and SR-45 in Yolo County. Site A of the Project is approximately 2.5 miles east of the community of College City, 1 mile south of Tule Road, and 4.75 miles west of SR-45. Site B is approximately 4.25 miles southeast of Site A, approximately 5.5 miles northeast of the community of Dunnigan, 3.4 miles west of SR-45, and 1 mile north of the Yolo County Line. The Project is bound to the west by the Colusa Basin Drainage Canal. The spoils area is located approximately 7.3 miles southeast of Site B, 0.9 mile west-southwest of SR-45, and 1.5 miles northeast of CR-108 and the Colusa Basin Drainage Canal.

4.5.1.1 Pre-Contact History

It is generally believed that human occupation of California began at least 10,000 years before present (BP). The archaeological record indicates that between approximately 10,000 and 8,000 BP, a predominantly hunting economy existed, characterized by archaeological sites containing numerous projectile points and butchered large animal bones. Animals that were hunted probably consisted mostly of large species still alive today. Bones of extinct species have been found but cannot definitely be associated with human artifacts. Although small animal bones and plant-grinding tools are rarely found within archaeological sites of this period, small game and floral foods were probably exploited on a limited basis. A lack of deep cultural deposits from this period suggests that groups included only small numbers of individuals who did not often stay in one place for extended periods.

Around 8,000 BP, there was a shift in focus from hunting toward a greater reliance on plant resources. Archaeological evidence of this trend consists of a much greater number of milling tools (e.g., metates and manos) for processing seeds and other vegetable matter. This period, which extended until around 5,000 BP, is sometimes referred to as the Millingstone Horizon. Projectile points are found in archaeological sites from this period, but they are far fewer in number than from sites dating to before 8,000 BP. An increase in the size of groups and the stability of settlements is indicated by deep, extensive middens at some sites from this period.

Archaeological evidence indicates that reliance on both plant gathering and hunting continued as in the previous period in sites dating to after about 5,000 BP, with more specialized adaptation to particular environments. Mortars and pestles were added to metates and manos for grinding seeds and other vegetable material. Flaked-stone tools became more refined and specialized, and bone tools were more common. During this period, new peoples from the Great Basin began entering southern California. These immigrants, who spoke a language of the Uto-Aztecan linguistic stock, seem to have displaced or absorbed the earlier population of Hokan-speaking peoples. During this period, known as the Late Horizon, population densities were higher than before, and settlement became concentrated in villages and communities along the coast and interior valleys. Regional subcultures also started to develop, each

with its own geographical territory and language or dialect. These were most likely the basis for the groups encountered by the first Europeans during the 18th century. Despite the regional differences, many material culture traits were shared among groups, indicating a great deal of interaction. The introduction of the bow and arrow into the region sometime around 2,000 BP is indicated by the presence of small projectile points.

4.5.1.2 Ethnography

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

The Patwin territory included both the River Patwin and Hill Patwin and extended from the southern portion of the Sacramento River Valley to the west of the river, from the town of Princeton south to San Pablo and Suisun bays. As a language, Patwin (meaning "people") is part of the Wintu linguistic family which has three main groups: Southern or Patwin; Central, of Glenn and Tehama counties; and the Northern, of the upper Sacramento, lower Pit, and the upper Trinity drainages. The Hill Patwin territory includes the lower hills of the eastern Coast Range Mountain slope (Long, Indian, Bear, Capay, Cortina, and Napa Valley). Between there and the foothills, the grassy plains were largely unsettled, used mainly as a foraging ground by both valley and hill groups. Patwin pre-contact population numbers are not precise, but Kroeber estimates 12,500 for the Wintu, Nomlaki, and Patwin groups. These numbers reflect groups prior to the 1833 malaria epidemic.

4.5.1.3 Project Area History

Formed in 1870, RD 108 served the purpose of protecting land subject to periodic overflow. As a governmental entity, RD 108 was created by authority of the state legislature and contained governmental powers within its boundaries. Though originally located primarily in Yolo County, RD 108 now resides in both Yolo County and Colusa County due to multiple boundary changes preceding 1913. The district, which is located along the western edge of the Sacramento River, was responsible for the construction of miles of drainage ditches, canals, levees, and multiple pump stations that helped to alleviate the threat of flooding and regulate water in a way that would benefit the surrounding area.

One of the many projects undertaken by RD 108 was the construction of the Colusa Basin Drainage Canal and its associated levees, which began in 1903. Completed in 1911, the Colusa Basin Drainage Canal is a 35-mile-long canal that consists of a series of levees that were partially built on the Sycamore Slough. The purpose of the canal was to provide relief from flooding of the upper Colusa Basin by draining water through the Knight's Landing Ridge Cut and into the Yolo Basin. The dredging from the construction of this canal resulted in the production of over 35 miles of levees. As one of the many RD 108 projects, the construction of the drainage canal and levees greatly reduced the threat of flooding and enhanced farming in the area.

4.5.1.4 Research Methods

The analysis of cultural resources was based on a records and literature search conducted at the Northwest Information Center of the California Historical Resources Information System at California State University, Sonoma on January 12, 2024. The records search was to determine the extent of previous surveys within a 1.0-mile radius of the Project location.

In addition to the official records and maps for archaeological sites and surveys in Colusa County, the following historic references were also reviewed: Built Environment Resource Directory; Historic Property Data File for Colusa County; the National Register Information System; Office of Historic Preservation, California Historical Landmarks; California Points of Historical Interest; Directory of Properties in the Historical Resources Inventory; Caltrans Local Bridge Survey; Caltrans State Bridge Survey; and *Historic Spots in California*. Further research methods included the study of relevant books, online archival research, and newspaper research. ECORP conducted a search for a local historical registry. No such registry was found for Colusa County.

In addition to the records search, ECORP contacted the California Native American Heritage Commission (NAHC) on January 12, 2024 to request a search of the Sacred Lands File for the Project area. ECORP also sent letters to the Colusa County Historical Society, the Colusa County Geological Society, and the Sacramento Valley Museum on January 12, 2024 to solicit comments or obtain historical information that the repository might have regarding events, people, or resources of historical significance in the area.

ECORP subjected Site A and Site B to an intensive pedestrian survey on February 7, 2024, under the guidance of the *Secretary of the Interior's Standards for the Identification of Historic Properties* using 15-meter transects. ECORP expended 0.5 person-day in the field. ECORP examined the ground surface for indications of surface or subsurface cultural resources and inspected the general morphological characteristics of the ground surface for indications of subsurface deposits that may be manifested on the surface, such as circular depressions or ditches. Whenever possible, ECORP examined the locations of subsurface exposures caused by such factors as rodent activity, water or soil erosion, or vegetation disturbances for artifacts or for indications of buried deposits. Additionally, ECORP surveyed the spoils area of the Project area on February 29, 2024. No subsurface investigations or artifact collections were undertaken during the pedestrian survey.

4.5.2 Cultural Resources (V) Environmental Checklist and Discussion

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

Less Than Significant Impact With Mitigation Incorporated.

The records search and the 2024 field survey yielded one historic-period canal and levee system within the Area of Potential Effects (APE): P-6-703 (Colusa Basin Drainage Canal). The Colusa Basin Drainage Canal was first recorded in 1986, then thoroughly updated and recorded in 1992, with subsequent recordings in 1998, 2007, and in 2012. In 2012, a previous firm recorded and evaluated a segment of the Colusa Basin Drainage Canal East Levee approximately 1.3 miles north of Site A and determined that was not eligible for National Register of Historic Places (NRHP) or California Register of Historic Resources (CRHR). ECORP evaluated the resource using NRHP and CRHR criteria and concurred with the original findings that it is not eligible.

There is a potential of buried historic-era material within the Project area due to the agricultural activities that have been conducted in the area since the 1920s. However, these types of agricultural activities are not likely to result in archaeological deposits. Considering the lack of buildings, camps, or any sort of occupation structures, the probability of encountering any unrecorded historic-period cultural material during the Project is also low.

There always remains the potential for ground-disturbing activities to expose previously unrecorded cultural resources. Therefore, the Proposed Project would implement mitigation measure CUL-1, which would ensure impacts would be less than significant.

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

Less Than Significant with Mitigation Incorporated

No archeological resources within the Project Area have been previously determined to be eligible for the NRHP or the CRHR under CEQA or Historic Properties under Section 106 National Historic Preservation Act (NHPA). A search of the Sacred Lands File by the California NAHC returned a negative result and failed to indicate the presence of Native American cultural resources within the Project Area.

Soils and geological data indicate that the Project area was perennial swampland during the pre-contact period, which would indicate a relatively low probability for buried pre-contact cultural resources. Furthermore, the use of the surrounding lands for agriculture, specifically rice production, since the construction of the Colusa Basin Drainage Canal and the emptying of the Colusa Basin in the early 20th century likely would have destroyed all but the most deeply buried potential cultural materials. Additionally, the entirety of the ground disturbance within the Project area is within the Colusa Basin Drainage Canal East Levee, which is composed of artificial fill. Given the required depth of disturbance for this Project, and considering everything presented in this report, the likelihood of encountering any pre-contact cultural material during the Project is low.

However, there always remains the potential for ground-disturbing activities to expose previously unrecorded cultural resources. Therefore, the Proposed Project would implement mitigation measure CUL-1, which would ensure impacts would be less than significant.

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

Less Than Significant With Mitigation Incorporated

There are no known dedicated cemeteries within the Project Area. However, there exists a low potential for buried pre-contact or historical human remains in the Project Area because pre-contact archaeological sites are likely to be located along perennial waterways. Thus, Project construction may disturb unknown (or post-review) human remains. Mitigation measure CUL-1 will be implemented to reduce this potentially significant impact to less than significant levels with mitigation incorporated.

4.5.3 Mitigation Measures

CUL-1: Unanticipated or Post Review Discovery of Cultural Resources

- If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:
  - If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately and no agency notifications are required.
  - If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, the archaeologist shall immediately notify the lead agencies. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined by CEQA or a historic property under Section 106 NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not a Historical Resource under CEQA or a Historic Property under Section 106; or 2) that the treatment measures have been completed to their satisfaction.
  - If the find includes human remains, or remains that are potentially human, they shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Colusa County Coroner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code,

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

4.6 Energy

The consumption of energy resources results in direct and indirect environmental impacts through the depletion of nonrenewable resources (e.g., oil, natural gas, coal) and emissions of pollutants during energy production. As the Project is proposing improvements along the existing CBDC levee, the impact analysis focuses on the sole source of energy that is relevant to the Proposed Project, the equipment-fuel necessary for Project construction.

4.6.1 Environmental Setting

4.6.1.1 Energy Types and Sources

California relies on a regional power system comprised of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Natural gas provides California with a majority of its electricity, closely followed by renewables, large hydroelectric and nuclear (California Energy Commissions [CEC] 2023). Pacific Gas & Electric (PG&E) provides electricity and natural gas to Colusa County. The company has various sources of clean power to offer its customers, stating that in 2022, approximately 95 percent of the customer's electricity comes from greenhouse gas (GHG)-free resources, including renewables, nuclear, and hydroelectric power (PG&E 2024). Furthermore, approximately 40 percent of the electricity that PG&E provided was from renewable resources that qualified under the California Renewables Portfolio Standard (RPS), and the company remains on track for the new RPS mandate from Senate Bill (SB) 100, which mandates 60 RPS by 2030. PG&E also offers a program to customers to purchase up to 100 percent of their electricity from either solar or regional renewable energy sources. The company currently provides 5.5 million customers with electricity and natural gas throughout the state of California.

The California Public Utilities Commission (CPUC) regulates PG&E. The CPUC has developed energy efficiency programs such as smart meters, low-income programs, distribution generation programs, self-

generation incentive programs, and a California solar initiative. Additionally, the CEC maintains a power plant database that describes all of the operating power plants in the state by county.

Fuel use in internal-combustion engines is typically measured in gallons (e.g., of gasoline or diesel fuel) and energy use in electric vehicles is measured in kWh.

Automotive fuel consumption in Colusa County from 2019 to 2023 is shown in Table 4.6-1. As shown, fuel consumption has decreased since 2019.

Table 4.6-1. Automotive Fuel Consumption in Colusa County 2019-2023

Year	Total Fuel Consumption
2023	1,157,633,322
2022	1,170,315,194
2021	1,176,193,845
2020	1,068,928,935
2019	1,189,947,283

Source: California Air Resources Board (CARB) 2024

4.6.2 Energy (VI) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐

Less Than Significant Impact.

This impact analysis focuses on the source of energy that is relevant to the Proposed Project: the equipment fuel necessary for Project construction. Addressing energy impacts requires an agency to determine what constitutes a significant impact. There are no established thresholds of significance, statewide or locally, for what constitutes a wasteful, inefficient, and unnecessary consumption of fuel for a proposed land use project. For the purposes of this analysis, the amount of fuel necessary for Project construction is calculated and compared to all fuel consumed in Colusa County. The total construction-related fuel use was estimated using ratios provided in the Climate Registry's General Reporting Protocol for the Voluntary Reporting Program, Version 2.1 (ECORP 2024d, Appendix C). Fuel consumption associated with Proposed Project construction is summarized in Table 4.6-2.

Table 4.6-2. Proposed Project Fuel Consumption		
Energy Type	**Annual Energy Consumption (Gallons)**	**Percentage Increase Countywide**
Project Construction Calendar Year One	26,601	0.0022
Project Construction Calendar Year Two	3,842	0.0003

Source: Climate Registry 2016. See Appendix C.

Notes: The Project increase in construction fuel consumption is compared with the countywide fuel consumption in 2023, the most recent full year of data.

Fuel necessary for Project construction would be required for the operation and maintenance of construction equipment and the transportation of materials to the Project Site. The fuel expenditure necessary to construct the physical buildings and infrastructure would be temporary, lasting only as long as Project construction. As indicated in Table 4.6-2, the Project's gasoline fuel consumption during the first calendar year of construction is estimated to be 26,601 gallons and the Project's gasoline fuel consumption during the second calendar year of construction is estimated to be 43,842 gallons. This would increase the annual fuel use in the County by 0.0022 percent and 0.0003 percent, respectively. As such, Project construction would have a nominal effect on local and regional energy supplies. No unusual Project characteristics would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in the region or the state. Construction contractors would purchase their own gasoline and diesel fuel from local suppliers and would judiciously use fuel supplies to minimize costs due to waste and subsequently maximize profits. Additionally, construction equipment fleet turnover and increasingly stringent state and federal regulations on engine efficiency combined with state regulations limiting engine idling times and requiring recycling of construction debris, would further reduce the amount of transportation fuel demand during Project construction. For these reasons, it is expected that construction fuel consumption associated with the Project would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature. This impact would be less than significant.

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

Less Than Significant Impact.

The Project would not conflict with or obstruct state or local plans for renewable energy or energy efficiency as the Project does not involve activities or infrastructure that directly consumes energy once construction is complete. Although the Proposed Project would not include the construction of any buildings, the Project would adhere to all relevant standards of the Energy Efficiency Standards for Residential and Nonresidential Buildings, as specified in Title 24, Part 6, of the California Code of Regulations (CCR) (Title 24) which indirectly influences construction practices that improve energy consumption and efficiency. Thus, a less than significant impact would occur.

4.6.3 Mitigation Measures

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

4.7 Geology and Soils

4.7.1 Environmental Setting

The Project Area is situated at elevations ranging between 15 feet to 50 feet above MSL in the Sacramento Valley Subregion of the Great Central Valley floristic region of California. The surrounding topography of the region is mostly flat within the Sacramento Valley.

4.7.1.1 Geomorphic Setting

Rosenthal and Willis (2017) describe the geology of the Sacramento Valley as a large, asymmetric, structural trough (syncline) formed by westward-tilting blocks of plutonic and metamorphic rocks on the eastern side, and highly folded and faulted blocks of metamorphic rocks (Franciscan) on the western side. This basin has been partially filled by a thick sequence (up to 12.4 miles [20 kilometers] thick) of sedimentary rocks and alluvial deposits that range from late Jurassic to Historical in age. During the Pleistocene, erosion of the Sierra Nevada led to the deposition of large alluvial fans at the base of the foothills along the eastern side of the Sacramento Valley. Glacial conditions are generally credited for the deposition of these fans, while subsequent interglacial periods are marked by landscape stability, soil formation, and channel incision. Subsequent depositional cycles during the Holocene progressively buried downstream sections of many older alluvial fans and also led to the formation of inset stream terraces and nested alluvial fans along the foothills (Rosenthal and Willis 2017).

4.7.1.2 Regional Seismicity and Fault Zones

An active fault, per California's Alquist-Priolo Act, is one that has ruptured within the Holocene Epoch (≈11,000 years). Based on this criterion, the California Geological Survey (CGS) identifies Earthquake Fault Zones. These Alquist-Priolo Fault Zones are identified in Special Publication 42 (SP42), which is updated as new fault data become available. Table 4 of SP42 lists all counties and cities within California that are affected by designated Earthquake Fault Zones. The Fault Zones are delineated in Figure 4 and Figures 4A through 4J of SP42 (CGS 2007). There are no Alquist-Priolo Earthquake Fault Zones identified within Colusa or Yolo counties.

The California State Seismic Hazards Mapping Act addresses hazards along active faults. No seismic hazards zones are identified within the County of Colusa (CGS 2024). Additionally, there are no seismic hazard zones identified within the Project Area of Yolo County (CGS 2024).

In addition to the CGS fault delineation activities, the USGS is responsible for the production of National Seismic Hazard Maps. The closest quaternary fault to the Project location is the Dunnigan Hills Late Quaternary Fault (<130,000 years), which is approximately 5.5 miles from Site B (USGS 2024).

4.7.1.3 Soils

Table 4.7-1 provides an overview of the soil series mapped within the Project area and key features of the soil series, such as hydric rating or presence of serpentine or gabbroic soil material. Additionally, Figure 4.7-1 shows the different soils within the Project Area.

Table 4.7-1. Soil Units Occurring within the Project Area

Soil Unit	Hydric Components2	Hydric Component Landform
Clear Lake clay, 0 to 1 percent slopes, occasionally flooded, MLRA 17 (115)	Clear Lake	Basin Floors
Sacramento clay, 0 to 2 percent slopes, MLRA 17 (Sc)	Sacramento, Willows, Clear Lake, Omni	Basin Floors
	Sycamore	Alluvial Fans
	Merritt	Floodplain Steps

Note: MLRA = Major Land Resource Area

[1]Source: Natural Resources Conservation Service (NRCS) 2024a

[2]Source: NRCS 2024b

According to the Web Soil Survey (NRCS 2024a), two soil mapping units are within the Project Area (Figure 4.7-1. *Natural Resources Conservation Service Soil Types*):

- Clear Lake clay, 0 to 1 percent slopes, occasionally flooded, MLRA 17 (115);
- Sacramento clay, 0 to 2 percent slopes, MLRA 17 (Sc);

The Clear Lake series is a soil that consists of very deep and poorly drained soils, which is composed of a mix of alluvium from igneous, metamorphic, and sedimentary parent material (NRCS 2024a). Clear Lake clay, 0 to 1 percent slopes, occasionally flooded MLRA 17 (115) is primarily composed of the hydric Clear Lake soil series but may contain non-hydric minor components (NRCS 2024b).

The Sacramento series is a soil that consists of very deep, poorly drained soils, which is composed of a mix of alluvium from igneous, metamorphic, and sedimentary parent material (NRCS 2024a). Both major and minor components of Sacramento clay, 0 to 2 percent slopes, MLRA 17 (Sc) are considered hydric soils (NRCS 2024b).

Map Contents

Study Area - 6.34 ac.

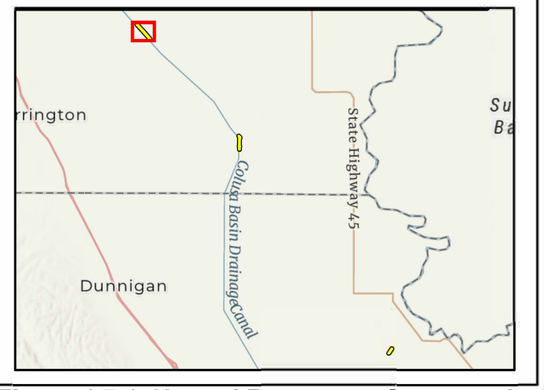
Series Number - Series Name

115 - Clear Lake clay, 0 to 1 percent slopes, occasionally flooded, MLRA 17

652 - Water

Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database for COLUSA, CA and YOLO, CA

Sources: Esri, Maxar (2023)
Other Related Info if Needed



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Map Date: 9/10/2024

ECORP Consulting, Inc.
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Scale in Feet
0 300

Figure 4.7-1. Natural Resources Conservation Service Soils Types
2022-132.02 Reclamation District 108

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Map Contents

Study Area - 3.94 ac.

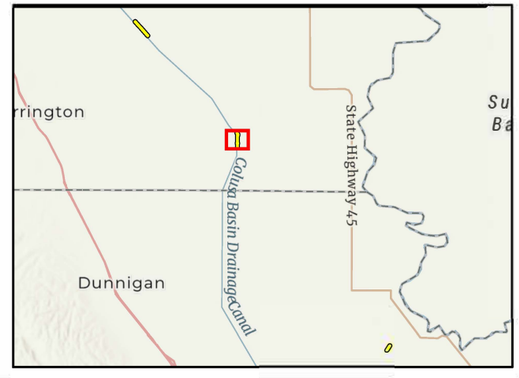
Series Number - Series Name

115 - Clear Lake clay, 0 to 1 percent slopes, occasionally flooded, MLRA 17

Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database for COLUSA, CA and YOLO, CA

Sources: Esri, Maxar (2023)

Other Related Info if Needed



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Map Date: 9/10/2024

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Scale in Feet
0 300

Figure 4.7-1. Natural Resources Conservation Service Soils Types
2022-132.02 Reclamation District 108

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Map Contents

Study Area - 1.14 ac.

Series Number - Series Name

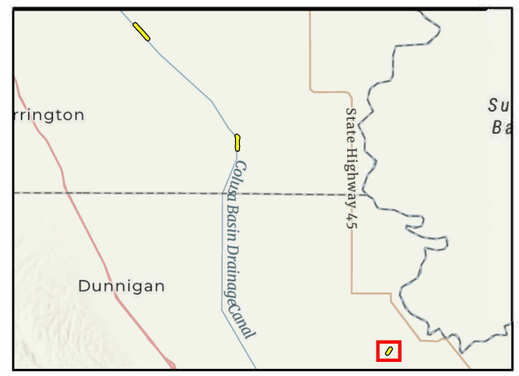
Sc - Sacramento clay, 0 to 2 percent slopes, MLRA 17

W - Water

Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database for COLUSA, CA and YOLO, CA

Sources: Esri, Maxar (2023)

Other Related Info if Needed



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Map Date: 9/10/2024

ECORP Consulting, Inc.
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Scale in Feet
0 300

Figure 4.7-1. Natural Resources Conservation Service Soils Types
2022-132.02 Reclamation District 108

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4.7.2 Regulatory Framework

4.7.2.1 Federal

Earthquake Hazard Reduction Act of 1977 (Amended 2004)

The Earthquake Hazard Reduction Act includes provisions for earthquake hazard reduction measures to improve design and construction methods and practices, land-use controls and redevelopment, prediction and early-warning systems, coordinated emergency preparedness plans, and public education/involvement programs. The Earthquake Hazard Reduction Act led to the creation of the National Earthquake Hazards Reduction Program, which is a collaborative effort among the Federal Emergency Management Agency (FEMA), the National Institute of Standards and Technology, the National Science Foundation, and the USGS.

4.7.2.2 State

California Building Code and California Health and Safety Code

California provides minimum standards for building design through the California Building Code (CBC, CCR, Title 24). The state earthquake protection law (California Health and Safety Code Section 19100 et seq.) requires that structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. The CBC identifies seismic factors that must be considered in structural design, as well as regulates the excavation of foundations and retaining walls, construction on unstable soils, such as expansive soils and areas subject to liquefaction, and regulates grading activities, including drainage and erosion control.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (PRC Division 2, Chapter 7.5) provides policies and criteria to assist cities, counties, and state agencies prohibit the location of developments and structures for human occupancy across the trace of active faults. To assist cities and counties, the state geologist delineates and compiles maps of earthquake fault zones to encompass all potentially and recently active traces of faults.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (PRC Division 2, Chapter 7.8 and CCR Title 14, Article 10) provides for a statewide seismic hazard mapping and technical advisory program to assist cities and counties in protecting the public health and safety from the effects of strong ground shaking, liquefaction, landslides or other ground failure and other seismic hazards caused by earthquakes.

4.7.2.3 Local

County of Colusa County Code

The following goals and policies of the Colusa County Municipal Code (Colusa County 2024) are applicable to the Project:

- Chapter 5: Building Code: The purpose of the Colusa County Building Code is to "enact regulations relating to buildings and structures, imposing restrictions thereon and to provide for their enforcement." The County has adopted the CBC without amendment.
- Chapter 9: Land Grading and Leveling: This chapter establishes grading plan content and public works review requirements. This chapter states that no person shall grade or level, cause to be graded or levelled, or commence grading or levelling operations upon any land area of five or more acres, or move, excavate, remove, dredge, pile or stockpile earth or other material so as to change, or cause to be changed, the natural course of any channel or waterway without first having complied with the provisions of this chapter.

County of Yolo 2030 Countywide General Plan

The following goals and policies of the Yolo County 2030 Countywide General Plan- Health and Safety Element (Yolo County 2006) are applicable to the Project:

GOAL HS-1 Geologic Hazards: Protect the public and reduce damage to property from earthquakes and other geologic hazards.

Policy HS-1.1: Regulate land development to avoid unreasonable exposure to geologic hazards.

Policy HS-1.2: All development and construction proposals shall be reviewed by the county to ensure conformance to applicable building standards.

Policy HS-1.3: Require environmental documents prepared in connection with CEQA to address seismic safety issues and to provide adequate mitigation for existing and potential hazards identified.

4.7.3 Geology and Soils (VII) Environmental Checklist and Discussion

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

a) Less Than Significant Impact.

i) No Impact.

None of the Project sites are located within an Alquist-Priolo Earthquake Zone (CGS 2011). The Project Sites are not within a currently established State of California Earthquake Fault Zone for surface fault rupture hazards. No active or potentially active faults are known to pass directly beneath the Site. By CGS definition, an active fault is one with surface displacement within the last 11,000 years. A potentially active fault has demonstrated evidence of surface displacement within the past 1.6 million years. Faults that have not moved in the last 1.6 million years are typically considered inactive. The project would not place structures or dwellings within a fault line or fault zoning mapped area; therefore, there would be no impact related to fault rupture.

ii) Less Than Significant Impact.

According to CGS Earthquake Shaking Potential for California mapping, the Project Site is located in an area with a low likelihood of experience ground shaking (CGS 2016). Project actions will involve doing levee erosion repair slopes and re-grading and compacting to reduce potential impacts from earthquake ground shaking. The proposed improvements would not involve the construction of any structures intended for human occupancy or the construction or modification of any structure in an area subject to seismic ground shaking or seismic-related ground failure. Thus, this impact would be less than significant.

iii) Less Than Significant Impact.

Liquefaction occurs when loose sand and silt saturated with water behaves like a liquid when shaken by an earthquake. Liquefaction can result in the following types of seismic-related ground failure:

- Loss of bearing strength – soils liquefy and lose the ability to support structures.
- Lateral spreading – soils slide down gentle slopes or toward stream banks.
- Flow failures – soils move down steep slopes with large displacement.
- Ground oscillation – surface soils, riding on a buried liquefied layer, are thrown back and forth by shaking.
- Flotation – floating of light buried structures to the surface.
- Settlement – settling of ground surface as soils reconsolidate.
- Subsidence – compaction of soil and sediment.

Liquefaction potential has been found to be greatest where the groundwater level and loose sands occur within a depth of about 50 feet or less. The Department of Conservation provides mapping for areas susceptible to liquefaction in California. According to this mapping, the Project Site is not located in a seismic hazard liquefaction zone (CGS 2023). However, some of the Project Site soils have moderate to high linear extensibility ratings, which is directly related to shrink-swell potential and liquefaction potential. All excavation and fill activities conducted as part of the Proposed Project would be designed based on the results of detailed geotechnical engineering studies and would be required to comply with standard engineering practices. Because the design and construction of all modifications under the Project would meet or exceed applicable design standards for static and dynamic stability, expansive soils, secondary effects related to ground shaking, and seepage, and the low potential for seismic ground shaking, the Project would result in less than significant impacts with regard to seismic-related ground failure, including liquefaction.

iv) Less Than Significant Impact.

The Project Area includes human-made earthen levee with slopes up to 20 feet in elevation gain that could be susceptible to landslides during a seismic event. As mentioned above, all excavation and fill activities conducted as part of the Proposed Project would be designed based on the results of detailed geotechnical engineering studies and would be required to comply with standard engineering practices. With implementation of the Project, the existing levee that has slope stability damage would be re-graded

and filled with material, and potential impacts from minor landslides and slumping would be reduced from current levels. As such, the potential for landslides would be a less than significant impact.

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

Less Than Significant Impact.

The Project design includes incorporating excavated materials from the Project Site into the work, thus limiting the net loss of topsoil. Some minor soil erosion may occur during Project construction due to vegetation removal, re-grading levee slopes, and fill placement. However, the excavated material and import material will be placed and compacted in accordance with the construction standards listed in Title 23 of the CCR for levee construction which would manage erosion and any loss of topsoil during construction-related activities. Any impacts would be less than significant.

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

Less Than Significant Impact.

The Project is designed to stabilize and improve existing levee. In addition, no permanent structures would be constructed under the Project. Therefore, the Project would not put the population at risk of adverse impacts associated with landslides, lateral spreading, subsidence, liquefaction, or collapse. Implementation of the Proposed Project would enhance the levee from its existing state by repairing the damaged sections. Therefore, any impacts would be less than significant.

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

Less Than Significant Impact.

No permanent structures would be constructed under the Project. Therefore, the Project would not put the population at risk of adverse impacts associated with any expansive soils in the area. Therefore, there would be less than significant impact.

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

No Impact.

Project does not require any wastewater sewer system and would not require the construction of septic tanks or alternative wastewater disposal systems. Thus, there is no impact associated with Project Site soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems.

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

Less Than Significant Impact With Mitigation Incorporated.

A paleontological records search was conducted for the Project by the Sierra College Natural History Museum and no paleontological resources were found to be adjacent or within the Project areas. Although paleontological resources sites were not identified in the Project Area, there is the possibility that unanticipated paleontological resources will be encountered during ground-disturbing Project-related activities requiring mitigation. Therefore, this impact is less than significant with mitigation incorporated. As such, mitigation measure GEO-1 is included to reduce impacts on unknown paleontological resources to a less than significant level.

4.7.4 Mitigation Measures

GEO-1: **Discovery of Unanticipated Paleontological Resources.** If paleontological or other geologically sensitive resources are identified during any phase of Project development, the construction manager shall cease operation at the site of the discovery and immediately notify RD 108. RD 108 shall retain a qualified paleontologist to provide an evaluation of the find and to prescribe mitigation measures to reduce impacts to a less-than-significant level. In considering any suggested mitigation proposed by the consulting paleontologist, RD 108 shall determine whether avoidance is necessary and feasible in light of factors such as the

nature of the find, Project design, costs, land use assumptions, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the Project Site while mitigation for paleontological resources is carried out.

4.8 Greenhouse Gas Emissions

4.8.1 Environmental Setting

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

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

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

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

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

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

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

The significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines § 15064.4(b)(2) by considering whether the Project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. The CCAPCD, the regional air pollution control officer for the basin, has not adopted a GHG significance threshold. Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). Thus, in the absence of any GHG emissions significance thresholds the projected emissions are compared to the GHG thresholds recommended by issued by the California Air Pollution Control Officers Association (CAPCOA), which is an association of the air pollution control officers from all 35 local air quality agencies throughout California, including the CCAPCD. CAPCOA recommends a significance threshold of 900 metric tons annually. This threshold is based on a capture rate of 90 percent of land use development projects, which in turn translates into a 90 percent capture rate of all GHG emissions. The 900 metric ton threshold is considered by CAPCOA to be low enough to capture a substantial fraction of future projects that will be constructed to accommodate future statewide population and economic

growth, while setting the emission threshold high enough to exclude small projects that will in aggregate contribute a relatively small fraction of the cumulative statewide GHG emissions. The 900 metric tons of CO_2e per year value is typically used in defining small projects that are considered less than significant because it represents less than one percent of future 2050 statewide GHG emissions target and the lead agency can provide more efficient implementation of CEQA by focusing its scarce resources on the top 90 percent. Land use projects above the 900 metric tons of CO_2e per year level would fall within the percentage of largest projects that are worth mitigating without wasting scarce financial, governmental, physical and social resources.

4.8.2 Greenhouse Gas Emissions (VIII) Environmental Checklist and Discussion

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

Less Than Significant Impact.

Where GHG emission quantification was required, emissions were modeled using CalEEMod version 2022.1. CalEEMod is a statewide land use emissions computer model designed to quantify potential GHG emissions associated with both construction and operations from a variety of land use projects. Project construction generated GHG emissions were calculated using CalEEMod model defaults for Colusa County as well as information provided by the Project proponent such as construction timing, the type of construction equipment, and the amount of material that will be imported and exported. As the Project is proposing improvements to the existing CBDC levee, operational GHG emissions are discussed qualitatively.

4.8.2.1 Construction GHG Emissions

Construction related activities that would generate GHG emissions include worker commute trips, haul trucks carrying supplies and materials to and from the Project Site, and off-road construction equipment (e.g., dozers, loaders, excavators). Table 4.8-1 illustrates the specific construction generated GHG emissions that would result from construction of the Project. Once construction is complete, the generation of these GHG emissions would cease.

Table 4.8-1. Construction-Related Greenhouse Gas Emissions	
Emissions Source	**CO_2e (Metric Tons/Year)**
Construction Calander Year One	270
Construction Calander Year Two	39
Total Construction Emissions	309
CAPCOA Significance Threshold	900
Exceed CAPCOA Significance Threshold?	No

Notes: Construction emissions account for the import of 45,000 cubic yards of new material and the export of 45,000 cubic yards of existing material.
CAPCOA = California Air Pollution Control Officers Association; CO_2e = Carbon Dioxide Equivalent

Source: California Emissions Estimator Model (CalEEMod) version 2022.1. Refer to Appendix A for Model Data Outputs.

As shown in Table 4.8-1, Project construction would result in the generation of approximately 309 metric tons of CO_2e over the course of the first calendar year of construction and 45 metric tons of CO_2e over the course of the second calendar year of construction. This would be less than the CAPCOA GHG significance threshold. Also, once construction is complete, the generation of these GHG emissions would cease. This impact is less than significant.

4.8.2.2 Operational GHG Emissions

The Proposed Project would not include the provision of new permanent stationary or mobile sources of GHG emissions, and therefore would not generate quantifiable GHG emissions from Project operations beyond existing conditions. The Project is proposing improvements to the existing CBDC levee. Once the Proposed Project is implemented, there would be no increase in automobile trips to the area. Upon construction completion the Project would not be a source of GHG emissions. There would be no impact.

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

No Impact.

California promulgates several mandates and goals to reduce statewide GHG emissions, including the goal to reduce statewide GHG emissions to 40 percent below 1990 levels by the year 2030 (California SB 32) and 80 percent below 1990 levels by the year 2050 (Executive Order S-3-05). The Proposed Project is subject to compliance with SB 32. As discussed previously, construction Project-generated GHG emissions would not surpass the significance threshold of 900 metric tons of CO_2e annually established by

the CAPCOA and would not increase operational GHG emissions beyond current conditions. The threshold of 900 metric tons of carbon dioxide equivalent was prepared with the purpose of complying with statewide GHG-reduction efforts. Additionally, once construction of the Project is complete, there would not be any new sources of operational GHG emissions beyond existing conditions. Therefore, there is no impact.

4.8.3 Mitigation Measures

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

4.9 Hazards and Hazardous Materials

4.9.1 Environmental Setting

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

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

A hazardous material is defined in Title 22, Section 662601.10, of the CCR as follows:

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

The release of hazardous materials into the environment could potentially contaminate soils, surface water, and groundwater supplies.

The Yolo County Community Services Department Environmental Health Division and the Colusa County Environmental Health Division manages the regulation and enforcement of the most hazardous materials in Yolo County and Colusa County, respectively. Environmental Health is charged with the responsibility of enforcement of pertinent California health laws, rules, and regulations, and is responsible for responding to incidents involving any release or threatened release of hazardous materials. Environmental Health programs and services strive to prevent human injury and illness and promote well-being by identifying and evaluating environmental sources and hazardous agents; and limiting exposures to hazardous physical, chemical, and biological agents in air, soil, food, and other environmental media or settings that may adversely affect human health. Environmental Health is responsible for requiring all business that use hazardous materials to comply with the state-required hazardous materials business plan submittal and

registration with the California Environmental Reporting System. Requirements and recommendations from Environmental Health are presented through the land use development process to mitigate or prevent any foreseeable health hazards or environmental degradation in the areas of hazardous materials and waste, solid waste, water supply, sewage disposal, vector control, food, housing, and recreational health.

ECORP searched the California Department of Toxic Substances Control's (DTSC) EnviroStor online database for listed hazardous material sites within one-half -mile radius of the Project Area and found no active sites (DTSC 2024). Additionally, ECORP searched the State Water Resources Control Board's (SWRCB) GeoTracker online database for hazardous materials sites within one-half mile of the Project Area and found no cases on any of three project locations (SWRCB 2024).

4.9.2 Regulatory Framework

4.9.2.1 Federal, State, And Local Regulations

Many agencies regulate hazardous substances. At the federal level, the principal agency regulating the generation, transport and disposal of hazardous waste is the USEPA, under the authority of the Resource Conservation and Recovery Act (RCRA). The USEPA regulates hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). California regulations governing hazardous materials are as stringent as (and in some cases, more stringent than) federal regulations. The state has been granted primacy (primary responsibility for oversight) by the USEPA to administer and enforce hazardous waste management programs. State regulations also have detailed planning and management requirements to ensure that hazardous materials are handled, stored, and disposed of properly to reduce human health and environmental risks. California regulations pertaining to hazardous waste management are published in the CCR, previously called the California Administrative Code. The CCR is updated annually and incorporates all legislation and final regulations enacted during the year, as well as specifying the agencies responsible for enforcing the various regulations.

4.9.2.2 Resource Conservation and Recovery Act

The RCRA of 1976 (substantially amended in 1984), administered by the USEPA, is the principal federal legislation regulating hazardous waste. The RCRA imposes reporting, permitting, and operational control requirements on businesses or individuals that generate, treat, store, or dispose of hazardous materials or hazardous waste. The RCRA is implemented by Title 40 of the CFR. The 1984 amendments to the RCRA involve stringent monitoring of landfills and underground storage tanks for hazardous materials and hazardous wastes.

4.9.2.3 Comprehensive Environmental Response, Compensation and Liability Act

In response to the need to clean up hazardous waste sites created before implementation of the RCRA, Congress enacted CERCLA in 1980. CERCLA is commonly referred to as Superfund. Subsequently, abandoned hazardous waste sites have to be inspected, cleaned up, and disposed of properly.

4.9.2.4 Superfund Amendments and Reauthorization Act

The risk of exposure to hazardous waste was addressed in RCRA, CERCLA, and the Superfund Amendments and Reauthorization Act of 1986. As a result of the Superfund Amendments and Reauthorization Act, the Occupational Safety and Health Administration published hazardous waste cleanup regulations in 29 CFR 1910.120.

4.9.2.5 Department of Toxic Substances Control

22 CCR gives the DTSC responsibility for regulating hazardous waste management at the state level. The DTSC regulates the treatment, storage, and disposal of hazardous waste in accordance with 22 CCR and the RCRA. The DTSC administers the state and federal Superfunds for cleanup of major hazardous waste contamination sites. Under Government Code Section 65962.5, both the DTSC and the SWRCB are required to maintain lists of sites known to have hazardous substances present in the environment. Both agencies maintain up-to-date lists on their website (DTSC 2024).

4.9.2.6 Regional Water Quality Control Board

23 CCR charges the nine RWQCBs with responsibility for overseeing water quality control. The RWQCBs are responsible for protecting actual or potential beneficial uses of water, including municipal, industrial, and agricultural water supplies and recreation. Each RWQCB has authority to supervise hazardous waste cleanup at sites referred by local agencies and in cases where water quality is affected or threatened. Either the DTSC or the RWQCB may be responsible for cleanup of sites of significant contamination by hazardous wastes. The two agencies often work together to ensure that their requirements are consistent and are implemented as intended.

4.9.2.7 California Occupational Safety and Health Administration

Health and safety regulations applying to the investigation and cleanup of sites contaminated with hazardous waste are enforced by the California Occupational Safety and Health Administration under 8 CCR and the adopted federal regulations (29 CFR 1910).

4.9.2.8 Yolo County Community Services Department Environmental Health Division

Environmental Health regulates the use, storage and disposal of hazardous materials in Yolo County by issuing permits, monitoring regulatory compliance, investigating complaints, and other enforcement activities. Acting as the California Unified Program Agency, Environmental Health oversees remediation of certain contaminated sites resulting from leaking underground storage tanks.

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

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

Less Than Significant With Mitigation Incorporated.

The Project would involve the temporary use and transport of fuels, lubricating fluids, and oil for construction equipment that have the potential to result in minor spills. However, implementation of standard BMPs for management of hazardous materials during construction, combined with compliance with county, state, and federal regulations, as well as mitigation measure HAZ-1 will ensure that the potential risk of spills and adverse impacts on the environment is minimized. Therefore, impacts associated with hazardous materials use would be less than significant with mitigation incorporated.

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

Less Than Significant Impact.

Hazardous materials that would be used during construction of the Proposed Project would include diesel fuel, oil, and gasoline. Routine use of these materials is discussed under Impact 4.9.2(a) above. No hazardous materials would be stored or used at the Project Site after construction. Federal and state laws regulate the handling, storage, and transport of these and other hazardous materials, as well as the mechanisms to respond and clean up any spills along local and regional roadways or canals. Any use of hazardous materials would require the hazardous materials to be utilized, stored, and transported pursuant to state and federal safety regulations and adhere to both Colusa and Yolo County General Plan policies and actions regarding hazardous materials. Therefore, the Project would have a less than significant impact in this area.

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

No Impact.

There are no schools within a 0.25 mile of the Project Site. The nearest school is the Lloyd G Johnson Junior High in the City of Arbuckle, a public middle school, approximately 5.0 miles east of the most northern portion of the Project Site (Site A). Therefore, no impact would occur.

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

No Impact.

A query of the SWRCB's GeoTracker database and DTSC's EnviroStor indicates that there are no hazardous waste sites near or on the Proposed Project site's three locations (Site A, Site B, and the Spoils Area). Therefore, there are no other sites compiled pursuant to Government Code 65962.5. There would be no impact.

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

No Impact.

The Project Site is not within any airport land use plan or within two miles of a public airport. The closest airports to any of the three project locations is the privately owned McCabe Ranch Airport in the City of Arbuckle, followed by the privately owned Sunrise Dusters Airport within the community of Knights Landing, both are 6.3 miles and 6.5 miles away respectively. Therefore, there is no impact in this area.

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

Less Than Significant Impact With Mitigation Incorporated.

The Project is proposing to repair areas along the Colusa Basin Drainage Canal levees to decrease flood risk and repair damage. Most Project work would occur on property that is not accessible to the general public or any businesses. Project construction will require heavy equipment to be delivered to the Project Site via local roadways such as Interstate 5, SR 113, SR 45, and various county roads that could be used as emergency evacuation routes. However, Project construction is going to be short-term and include relatively low quantity of daily hauling truck trips, plus occasional and sporadic heavy duty truck trips for delivering heavy equipment and materials on and off site. It is not anticipated that the Proposed Project would result in significant traffic delays or physically interfere with the Colusa County Local Hazard Mitigation Plan (Colusa 2018) or the Yolo County Emergency Operations Plan (Yolo County 2013) or the Yolo Operational Area Multi-Hazard Mitigation Plan (Yolo County 2023). If the Proposed Project requires any lane closures as part of the Project construction, the Project shall implement mitigation measure TRANS-1, which would ensure that impacts remain less than significant.

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

Less Than Significant Impact.

The Project would be conducted entirely on RD 108 controlled land and would involve the use of heavy equipment, including a water truck for dust control. Existing residential structures are located in the community of College City near the northern end of the Project Area (Site A), while the majority of the land use and vegetation surrounding the Project is agricultural row crops. As discussed in Section 4.20 Wildfire, the Project Site is not located in or near state responsibility areas (SRA), or lands classified as very high fire hazard severity zones (FHSZ). According to the Local Responsibility Area map published by California Department of Forestry and Fire Protection (CAL FIRE; 2007), the Project Area is not in any local or state fire hazard severity zone, and the nearest High FHSZs are approximately 6.5 miles to the east, near Dunnigan. Although the Project Site does contain some vegetation areas along the levee, the Colusa Basin levee is not surrounded by wildlands or forest, limiting fire spread.

Because the majority of the Project Site is near a perennial body of water, is surrounded mostly by non-flammable vegetation, and could suppress any small grass fires by using the onsite water truck or by the

Arbuckle/College City Fire Protection District, the risk of injury from wildfires would be less than significant.

4.9.4 Mitigation Measures

For mitigation measure TRANS-1, please refer to Section 4.17 of this IS/MND.

HAZ-1: **Hazardous Materials Management.** Vehicles shall be moved away from the Colusa Basin Drainage Canal and any waters of the U.S. or state prior to refueling and lubrication, as well as repairs if feasible. Staging and storage areas for equipment, materials, fuels, lubricants, and solvents shall be located away from the top of bank and riparian areas. Stationary equipment, such as motors, pumps, generators, compressors and welders, located within or adjacent to waters of the state shall be positioned over drip-pans. Debris, rubbish, oil, gasoline or diesel fuel, or other petroleum products, or any other substances which could be hazardous to aquatic life resulting from Project activities shall be prevented from contaminating the soil and/or entering waters of the state. Absorbent materials designated for spill containment shall be used for all activities performed in or within 50 feet of a watercourse that involve use of hazardous materials to be used for spill response and cleanup in the event of an accidental spill.

4.10 Hydrology and Water Quality

4.10.1 Environmental Setting

The Project proposes to conduct repairs along two segments of the CBDC East Levee: a 150-foot-long segment between Yolo County Line Road and White Road (Site A), and a 640-foot-long segment between White Road and Tule Road (Site B). Both sites are in Colusa County, though the Project also proposes to use a spoils area for depositing excess excavated material that would be located in Yolo County between County Road 108 and State Route 45. A water supply canal labeled "WS6," operated by RD 108 (District), runs parallel to the CBDC on the east side of the East Levee along both the Site A and Site B levee segments, and a drain line labeled "S9B," also operated by the District, runs adjacent to the WS6 canal along Site A (RD 108 2010).

Site A is approximately 7 miles west of the Sacramento River, and Site B is approximately 3.5 miles west of the river. Land use to the east of both sites is agricultural, while the land to the west of both sites is undeveloped, with agricultural uses further to the west.

4.10.1.1 Regional Hydrology

Surface Water

The Project Area is located in the greater Sacramento River hydrologic region, which covers approximately 17.4 million acres (27,200 square miles), including all or large portions of Modoc, Siskiyou, Lassen, Shasta, Tehama, Glenn, Plumas, Butte, Colusa, Sutter, Yuba, Sierra, Nevada, Placer, Sacramento, El Dorado, Yolo, Solano, Lake, and Napa counties, and small areas of Alpine and Amador counties. Geographically, the

region extends south from the Modoc Plateau and Cascade Range at the Oregon border to the Sacramento-San Joaquin Delta (California Department of Water Resources [DWR] 2003).

The Project Area is located entirely within the Sacramento Valley Subregion, which is part of the Sacramento River Watershed. The Sacramento Valley portion of the Sacramento River Hydrologic Region starts at Shasta Lake and Redding in the north and extends 250 miles south to Sacramento and the Delta. The watershed is 5,500 square miles in area and is characterized by the agricultural use between the foothills of the Sierra Nevada on the east and the Coast Ranges on the west. Sacramento River flows downstream of the Shasta dam are regulated and typically are lower in the winter season (when releases from the dam are reduced for flood protection) and higher in the summer (when water is being released for downstream irrigation needs). The Sacramento Valley can be broadly characterized as a flow-through system, in that most of the water not consumed for irrigation or other purposes eventually returns to the river via various tributaries or percolates to groundwater that recharges local aquifers. Winter flood flows in the valley still occur and are a major management issue. From Butte City downstream, flooding in the Sacramento River is controlled by an elaborate system of levees and bypasses. When river flows reach a certain height, water spills into the Colusa, Sutter, and Yolo Bypass channels in order to minimize risk of flooding to adjacent agricultural lands and major urban centers (including the city of Sacramento) (Sacramento Rivershed Water Program 2024).

Groundwater

The DWR manages and monitors groundwater in California. The Project sites are within the Sacramento Valley - Colusa Subbasin (basin number 5-021.52), and the identified spoils disposal site is within the Sacramento Valley – Yolo Subbasin (basin number 5-021.67) within the Sacramento Valley Hydrologic Region (DWR 2024). Stream percolation, deep percolation of rainwater, and percolation of irrigation water are the principal sources of groundwater recharge in the Sacramento Valley. The estimated storage capacity of the Sacramento Valley - Colusa Subbasin is approximately 13,025,887 acre-feet, to a depth of 200 feet, and is approximately 14,038,000 acre-feet in the Sacramento Valley – Yolo Subbasin, between 20 feet below the surface and 420 feet below the surface (LSA 2009). The Yolo County Subbasin is further divided into smaller subbasins. The identified spoils disposal area for the Project is within the Sacramento River North Yolo County subbasin, which has a very slow to moderate infiltration rate in the Project Area (LSA 2009).

4.10.1.2 Site Hydrology and Onsite Drainage

The CBDC collects streams and creeks originating in the Coast Range along with local drainage from northwest of the Project area. At the south end of the Colusa Basin Drain, flood waters pool at the Knights Landing Ridge. During flood conditions, flows from the Sacramento River enter the Yolo Bypass over the fixed Fremont Weir. During low stages on the Sacramento River, flows from the CBDC are discharged through the Knights Landing Outfall Gates into the Sacramento River. When the stage of the Sacramento River is high, the gates are closed, and flows are conveyed through the southern portion of the CBDC into the Yolo Bypass (DWR 2022).

The perennial CBDC channel primarily consists of open water, with large patches of emergent vegetation along the banks, below the ordinary high-water mark (OHWM). Four constructed agricultural ditches are present along the landside levee toe in areas of the Project Area adjacent to agricultural fields. The ditches exhibit a bed and bank and OHWM and appear to have been constructed to support agriculture irrigation or drainage. Stormwater would percolate into the ground or flow into the CBDC or one of the agricultural ditches. There are no other waterbodies in the Project Area.

The lands on both sides of the CBDC East Levee are remarkably flat and level, with only a few feet of elevation difference between the two sites and the town of Knights Landing, which is approximately 14 miles southeast of Site B.

Flood Hazard

Both sites have Special Flood Hazard Areas, as designated by FEMA. Site A is mapped within the 100-year floodplain (flood hazard zone AE) by FEMA (Flood Insurance Rate Map [FIRM] 06011C0688G (northern portion), and 06011C0700G (southern portion). Site B is also mapped within the 100-year floodplain (flood hazard zone AE) by FEMA (FIRM 06011C0850G. All three FIRMs are effective March 27, 2024 (FEMA 2024).

Water Quality

The California Water Code (Section 13240), supported by Section 303 of the federal CWA, requires the preparation and adoption of water quality control plans (Basin Plans) to establish water quality standards (i.e., water quality objectives) for the protection of the designated beneficial uses of navigable waters (RWQCB 2019). California's basin plans also establish water quality standards for groundwater in addition to surface water (RWQCB 2019). The Porter-Cologne Water Quality Control Act requires the RWQCB to establish water quality objectives, which are defined as "...the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area" (RWQCB 2019). The federal government (USEPA) has also established recommended aquatic water quality criteria for determining when water has become unsafe for people and wildlife.

The Project Site is covered under the Basin Plan for the Sacramento River Basin and the San Joaquin River Basin (RWQCB 2019). The Sacramento River Basin covers 27,210 square miles and includes the entire area drained by the Sacramento River (RWQCB 2019). The principal streams are the Sacramento River and its larger tributaries: the Pit, Feather, Yuba, Bear, and American rivers to the east; and Cottonwood, Stony, Cache, and Putah creeks to the west (RWQCB 2019). Major reservoirs and lakes include Shasta, Oroville, Folsom, Clear Lake, and Lake Berryessa. The Sacramento River Basin and the San Joaquin River Basin Plan identifies the following beneficial uses for the for the Yolo Bypass, the closest downstream receiving water for the Project Area: Agriculture (Irrigation and Stock Watering), Recreation (Contact and Other Non-Contact), Fresh Water Habitat (Warm and Cold), Migration (Warm and Cold), Spawning (Warm, and Wildlife Habitat. Water quality objectives for a variety of pollutants are contained in the Basin Plan for the protection of these beneficial uses (RWQCB 2019).

The CWA Section 303(d) establishes the total maximum daily load (TMDL) process to assist in guiding the application of state water quality standards. Section 303(d) requires states to identify streams in which

water quality is impaired (i.e., affected by the presence of pollutants or contaminants) and to establish the TMDL— the maximum quantity of a particular contaminant that a water body can assimilate without experiencing adverse effects. Based on the 2020-2022 California Integrated Report (State Water Resources Control Board 2022) 303(d) listed impairments for the CBDC include:

- Azinphos-methyl (Guthion), though staff has recommended de-listing this pollutant (Line of Evidence [LOE]116312)
- DDT (Dichlorodiphenyltrichloroethane) (LOE 127458)
- Dieldrin (LOE 116303)
- Mercury (LOE 131093)
- Dissolved Oxygen, new decision, TMDL expected 2035 (LOE 122298)
- Low Dissolved Oxygen (LOE 73424)
- Group A Pesticides (LOE 72781)

The 2020-2022 Report also delisted several impairments from the 303(d) list, including:

- Carbofuran (LOE 116293)
- Indicator Bacteria (LOE 127134)
- Methyl Parathion (LOE 116321)
- Molinate (LOE 128363)
- Toxicity (LOE 116337)
- Diazinon (LOE 116300)
- Malathion (LOE 116319)

4.10.2 Regulatory Framework

Relevant federal, state, and local laws and regulations pertaining to the protection of groundwater quality, water and sediment quality, and protection of the public from flooding and other hydrologic hazards are discussed below.

4.10.2.1 Federal

Floodplain Development

FEMA is responsible for determining flood elevations and floodplain boundaries based on USACE studies and approved agency studies. FEMA is also responsible for distributing the FIRMS, which are used in the National Flood Insurance Program. These maps identify the locations of special flood hazard areas.

Clean Water Act

The federal CWA was legislated with the primary purpose of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. The USEPA has delegated responsibility for implementation of portions of the CWA, including water quality control planning and control programs, such as the NPDES Program, to the SWRCB and the RWQCBs.

CWA Section 303(c)(2)(b). Section 303(c)(2)(b) of the CWA requires states to adopt water quality standards for all surface waters of the United States based on the water body's designated beneficial use. Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality standards are typically numeric, although narrative criteria based upon biomonitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numeric standards. Water quality standards applicable to the Proposed Project are listed in the Basin Plan (RWQCB 2019).

CWA Section 303(d). Section 303(d) of the CWA requires that states develop a list of water bodies that do not meet water quality standards (i.e., impaired water bodies), establish priority rankings for waters on the list, and develop action plans, called TMDLs, to improve water quality.

CWA Section 401. Section 401 of the CWA requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the U.S. to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards. Therefore, a Water Quality Certification under Section 401 of the CWA must accompany the USACE permit that must be issued for the Project pursuant to Section 10 of the Rivers and Harbors Act.

National Pollutant Discharge Elimination System Program

The CWA prohibits discharging "pollutants" through a "point source" into "Waters of the United States" unless they have an NPDES permit. The permit contains limits on what can be discharged, creates monitoring and reporting requirements, and implements other provisions to ensure that the discharge does not diminish water quality and/or people's health.

Safe Drinking Water Act

The Safe Drinking Water Act was established to protect the quality of drinking water in the U.S. This law focuses on all waters actually or potentially designed for drinking use, whether from above ground or underground sources. Pursuant to this act, legally enforceable standards have been set to protect public health.

National Toxics Rule and California Toxics Rule

In 1992, pursuant to the CWA, USEPA promulgated the National Toxics Rule (NTR) criteria to establish numeric criteria for priority toxic pollutants for California. The NTR established water quality standards for 42 priority pollutants not covered at the time under California's statewide water quality regulations. In May 2000, USEPA issued the California Toxics Rule, which promulgated numeric criteria for additional priority pollutants. The California Toxics Rule documentation (Volume 65, pages 31682–31719 of the Federal Register [65 Federal Register 31682–31719], May 18, 2000), along with amendments in February

2001, "carried forward" the previously promulgated criteria of the NTR, thereby providing a single document listing of water quality criteria for 126 priority pollutants for California surface waters.

Federal Antidegradation Policy

The federal antidegradation policy is designed to protect existing uses and the level of water quality necessary to protect existing uses. The federal policy directs states to adopt a statewide policy that includes the following primary provisions (40 CFR 131.12):

1. Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.
2. Where the quality of waters exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the state finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the state's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located.
3. Where high-quality waters constitute an outstanding national resource, such as waters of national and state parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

4.10.2.2 State

Porter-Cologne Water Quality Control Act and Waste Discharge Requirements

The Porter-Cologne Water Quality Control Act is California's statutory authority for the protection of water quality. Under the Act, California must adopt water quality policies, plans, and objectives (synonymous with the term "criteria" used by USEPA) that ensure beneficial uses of state waters are reasonably protected. The Porter-Cologne Water Quality Control Act requires the nine RWQCBs to adopt water quality control plans that define the beneficial uses of the water bodies throughout the region to be protected, the water quality objectives necessary for reasonable protection of the beneficial uses, and a program of implementation for achieving the water quality objectives. In addition, the act authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements for discharges of waste to surface waters and land. The Feather and Yuba rivers are within the jurisdiction of the Central Valley RWQCB.

Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin

The *Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin* (Basin Plan) (RWQCB 2019) defines the beneficial uses, water quality objectives, implementation programs, and surveillance and monitoring programs for waters of the Sacramento River and San Joaquin River basins. This Basin Plan contains specific numeric water quality objectives for bacteria, dissolved oxygen, pH, pesticides, electrical conductivity, temperature, turbidity, and trace elements, as well as numerous

narrative water quality objectives, which are applicable to certain water bodies or portions of water bodies.

State Water Resources Control Board Resolution No. 68-16: Statement of Policy with Respect to Maintaining High-Quality Waters in California

The goal of SWRCB Resolution No. 68-16 (*Statement of Policy with Respect to Maintaining High-Quality Waters in California*) is to maintain high-quality waters where they exist in the state. Resolution No. 68-16 states, in part:

1. Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the state that any change will be consistent with maximum benefit to the people of the state, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.

2. Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high-quality waters will be required to meet waste discharge requirements, which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the state will be maintained.

The SWRCB has interpreted Resolution No. 68-16 to incorporate, and be consistent with, the federal antidegradation policy (RWQCB 2019).

Statewide National Pollutant Discharge Elimination System Storm Water Permit for General Construction Activity

The SWRCB has issued a general NPDES permit for stormwater discharges associated with construction activity of greater than one acre in size—Order 2009-0009-DWQ, as amended by Orders 2010-0014-DWQ and 2012-0006-DWQ (General Construction Permit). The General Construction Permit requires the preparation of a Stormwater Pollution Prevention Plan (SWPPP) that identifies and describes the BMPs to be implemented at construction sites to control pollution from stormwater runoff. Coverage is obtained by submitting a Notice of Intent, risk assessment, post-construction calculations, a site map, the SWPPP, and a signed certification statement by the legally responsible person to the SWRCB prior to construction.

4.10.2.3 Local

County of Yolo 2030 Countywide General Plan

The following General Plan policies and action items would assist in reducing surface water quality impacts of the Project:

Policy CO-5.6 Improve and protect water quality for municipal, agricultural, and environmental uses.

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

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

Less Than Significant Impact With Mitigation Incorporated.

Sediment can be suspended in the water during levee repairs, including reconstructing levee slopes with the fill material. No work is being done within CBDC, however water work may be required within the ditches. Water quality in receiving waters may be affected from Project construction activities when contaminants on the sediment particles are either dissolved or resuspended in the water. In-water operations may cause some degradation temporarily to surface waters as concentrations of turbidity, total suspended solids, and other wastes may increase and dissolved oxygen decrease as bank sediments are disturbed in the construction process.

Construction could result in disturbance of more than one acre of land. Thus, compliance with the SWRCB general permit to discharge storm water associated with construction activity could be required. The general permit is known as SWRCB Order No. 2009-0009-DWQ (as amended by Orders 2010-0014-DWQ and 2012-0006-DWQ), NPDES General Permit No. CAS000002 for Stormwater Discharges Associated with Construction and Land Disturbance Activities (General Permit). A Notice of Intent would be required to be submitted for coverage under the General Permit and preparation of a SWPPP would be required.

The SWPPP would need to address any Project-related activities that have the potential to release pollutants in stormwater, including sediment, such as:

- Excavation work;
- Material stockpiling;
- Waste and soil screening;
- Loading and hauling of waste and construction materials; and
- Winterization of incomplete activities.

The SWPPP must identify the BMPs that would be implemented during construction and the final closure fieldwork to ensure that polluted stormwater runoff does not leave the site. The SWPPP would also need to include a monitoring program to document the effectiveness of the BMPs. Compliance with the SWPPP and implementation of the BMPs would prevent unacceptable degradation of surface water quality.

Section 404 of the CWA establishes a program to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Activities in waters of the U.S. regulated under this program include fill for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports) and mining projects. Section 404 requires a permit before

dredged or fill material may be discharged into waters of the U.S., unless the activity is exempt from Section 404 regulation (e.g., certain farming and forestry activities). The basic premise of the Section 404 program is that no discharge of dredged or fill material may be permitted if: (1) a practicable alternative exists that is less damaging to the aquatic environment or (2) the nation's waters would be significantly degraded. In other words, as a part of the application process for the 404 permit, steps must be shown that have been taken to avoid impacts to wetlands, streams and other aquatic resources; that potential impacts have been minimized; and that compensation will be provided for all remaining unavoidable impacts. A Nationwide Permit pursuant to Title 33 CFR 323.2(d) is required for the Project.

Along with a Nationwide Permit, a CWA Section 401 Water Quality Certification must be obtained from the Central Valley RWQCB prior to initiation of Project activities. A Water Quality Certification will be prepared and implemented for the Project as a requirement of the Section 401 Water Quality Certification. The RWQCB would review and approve the Water Quality Certification prior to construction, and may require water quality monitoring and sampling for in water work and diversions if necessary. The conditions of the Section 401 Water Quality Certification shall also be followed to ensure that applicable constituents of concern meet certain thresholds established by the RWQCB necessary to protect beneficial uses of the CBDC and downstream receiving waters.

Finally, California Fish and Game Code Section 1602 requires any person, state, or local governmental agency, or public utility to notify CDFW prior to beginning any activity that may do one or more of the following:

- Divert or obstruct the natural flow of any river, stream, or lake;
- Change the bed, channel, or bank of any river, stream, or lake;
- Use material from any river, stream, or lake; or
- Deposit or dispose of material into any river, stream, or lake.

All of the permitting requirements discussed above require the identification and implementation of BMPs to reduce the potential for water quality impacts, as necessary. With implementation of the Water Quality Certification and other measures required in the Section 401 Water Quality Certification/Waste Discharge Requirement issued by the RWQCB for the Project, impacts would be reduced to less than significant levels.

Strict permitting compliance, as required through implementation of mitigation measures BIO-9 in Section 4.4 coupled with the use of appropriate BMPs, would reduce potential water quality impacts during Project activities to a less than significant impact with mitigation incorporated.

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

Less Than Significant Impact.

The Project has been initiated to repair areas of the levee, and avoid further slope instability that threatens the integrity of the levee system. New engineered material would be imported, then backfilled and compacted. The repair slopes would be constructed to be no steeper than one foot horizontal to one-foot vertical and would be constructed to match the existing levee sections. While compaction of reconstructed levee soils may result in the inability of rainwater to penetrate the soil, the amount of these soil areas is not of such a size to substantially impede groundwater recharge. As such, the Project would have a less than significant impact on groundwater recharge.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:				
i) result in substantial erosion or siltation on- or off-site;	☐	☒	☐	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐

i) Less Than Significant With Mitigation Incorporated

The Project will repair areas of levee banks, and avoid further slope instability that threatens the integrity of the levee system. Grading and fill placement during construction could result in substantial temporary

erosion and siltation on the site. Once completed, the Project Area would return to its natural state. No structures or paved impervious surfaces would be constructed as a part of the Project.

Strict permitting compliance, as required through implementation of mitigation measure BIO-9, coupled with the use of appropriate BMPs, would reduce potential substantial erosion or siltation onsite or offsite during construction activities to a less than significant impact with mitigation incorporated. In addition, once the Project is completed, the repaired levee banks would result in a decreased risk of erosion or siltation of the water from the levee slopes.

ii) Less Than Significant Impact.

The main objective of the Project is to reduce the risk of flooding in the nearby areas by repairing the levees. Implementation of the Proposed Project would result in a net reduction in flood hazards in the area. Any impacts would be less than significant.

iii) Less Than Significant Impact.

The Project is the repair of existing CBDC levees. The Project would not change the course or direction of the natural drainage of the area. As such, the Project would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite. In addition, storm drainage in the area is provided through natural drainage down the levee banks into CBDC or to adjacent farmland. Four small agricultural drainage ditches at the toe of landward levee slopes could also drain stormwater into adjacent agricultural fields. The Project would not change this drainage. Any impacts would be less than significant.

iv) Less Than Significant Impact.

The repair of existing levees would not impede or redirect flood flows and would decrease the risk of levee breaks that could cause flooding. Any impacts would be less than significant.

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

Less Than Significant Impact.

The Project is within a FEMA 100-year Flood Hazard Zone (FEMA 2024), though the risk of inundation of the Project Area from dam failure or a large storm event is very low because the annual Project construction period would occur primarily during the dry season. If flood waters were to inundate the Project Area, there would be a low risk that pollutants would be released, because the planned Project equipment and activities are not expected to store or generate large quantities of chemicals and pollutants. Therefore, there would be a less than significant impact in this area.

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

Less Than Significant With Mitigation Incorporated

The CBDC is a part of the Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin (RWQCB 2019). This Basin Plan covers the entire area included in the Sacramento and San Joaquin River drainage basins. The Basin Plan provides objectives for the protection of surface and groundwater quality within the Sacramento River Basin. The Proposed Project would actually improve existing conditions on the levee slopes as the slope slips would be repaired, resulting in a decrease in potential sediment. Additionally, permit compliance under the biological resources mitigation measures BIO-9, coupled with the use of appropriate BMPs, as discussed under Item a) previously, would reduce potential water quality impacts during construction activities. As such, the Project would not conflict with or obstruct implementation of Basin Plan goals or objectives. The Project would have a less than significant with mitigation incorporated.

4.10.4 Mitigation Measures

For mitigation measure BIO-9, please refer to Section 4.4 of this IS/MND.

4.11 Land Use and Planning

4.11.1 Environmental Setting

The Project proposes to conduct repairs along two segments of the Colusa Basin Drainage Canal East Levee: a 150-foot-long segment between Yolo County Line Road and White Road, and a 640-foot-long segment between White Road and Tule Road. The Project also proposes to use a Spoils Area for depositing excess excavated material; this area is located in Yolo County between County Road 108 and State Route 45. The repair segments along the Colusa Basin Drainage Canal (Site A and Site B) are both zoned E-A Exclusive Agricultural (Colusa County 2024). The spoils location is zoned A-N Agricultural Intensive (Yolo County 2024).

4.11.2 Regulatory Framework

County of Colusa 2030 Countywide General Plan

The County of Colusa 2030 Countywide General Plan was adopted on July 31, 2012 (Colusa County 2012). The General Plan is the fundamental document governing land use development in the incorporated areas of the county. The Land Use Element provides for a development and resource conservation pattern that preserves and fosters the rural and agricultural character of Colusa County while allowing for

economic development. The Land Use Map depicts the County's vision for how open space, agricultural, commercial, industrial, and other uses will occur in the County.

The following General Plan Land Use Element policies apply to the Project:

Policy LU 1-9: Design services and infrastructure to only serve existing and planned land uses in areas planned for growth. Actions that will induce growth beyond planned levels are prohibited.

Goal LU-3: Ensure that future development achieves the County's goals of agricultural conservation, rural character, growth focused around existing communities and uses sustainable practices through application of development requirements.

County of Yolo 2030 Countywide General Plan

The County of Yolo 2030 Countywide General Plan was adopted on November 10, 2009 (Yolo County 2009). The General Plan is the fundamental document governing land use development in the incorporated areas of the county. The Land Use and Community Character Element of the General Plan seeks to preserve and foster the rural character of the county and also establishes goals for regional collaboration and equity, green building standards, sustainable community design and net community benefits from new growth. Growth boundaries have been established for every community and each of the four cities in the county.

The following General Plan Land Use Element policies apply to the Project:

GOAL LU-2 Agricultural Preservation. Preserve farmland and expand opportunities for related business and infrastructure to ensure a strong local agricultural economy. (See the Agriculture and Economic Development Element for a more comprehensive treatment of this issue.)

GOAL CC-1 Preservation of Rural Character. Ensure that the rural character of the county is protected and enhanced, including the unique and distinct character of the unincorporated communities.

Policy CC-1.1: Encourage private landowners of both residential and commercial properties to maintain their property in a way that contributes to the attractive appearance of Yolo County, while recognizing that many of the land uses in the county, including agriculture and light industry, require a variety of on-site structures, equipment, machinery and vehicles in order to operate effectively.

Policy CC-1.17: Existing trees and vegetation and natural landforms along scenic roadways and routes shall be retained to the greatest feasible extent. Landscaping shall be required to enhance scenic qualities and/or screen unsightly views and shall emphasize the use of native plants and habitat restoration to the extent possible. Removal of trees,

particularly those with scenic and/or historic value, shall be generally prohibited along the roadway or route.

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

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

No Impact.

The Project involves levee repair activities that would not block access to any community. No permanent structures would be built. Therefore, there would be no impact.

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

Less Than Significant Impact

The Project as proposed would not change the Colusa County 2030 Countywide General plan or the Yolo County 2030 Countywide General Plan agricultural land use and zoning. The Proposed Project would be consistent with Colusa County and Yolo County General Plan policies. The Project would not result in significant impacts on any land use plan, policy, or regulation. Therefore, this impact is less than significant.

4.11.4 Mitigation Measures

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

4.12 Mineral Resources

4.12.1 Environmental Setting

Minerals means "any naturally occurring chemical element or compound, or groups of elements and compounds, formed from inorganic processes and organic substances, including, but not limited to, coal, peat, and bituminous rock, but excluding geothermal resources, natural gas, and petroleum," according to the Surface Mining and Reclamation Act (SMARA).

The State Mining and Geology Board prioritize areas to be classified as containing significant mineral resources and areas to be designated as containing mineral deposits of regional or statewide significance. Mineral Resources Zone (MRZ) categories are used to identify areas identified, undetermined, and

unknown mineral resource significance. There are no MRZ designations that have been applied to Colusa County (DOC 2024c). The spoils location for the Proposed Project has been identified as MRZ-1, which is an area where available geological information indicates that little likelihood exists for the presence of significant resources (O'Neal and Guis, 2018).

The extraction of mineral resources in Yolo County has historically been limited to the extraction of clay, sand, soils, and rock, and natural gas (Yolo County 2009).

Mineral Resource Data System (MRDS) describes metallic and nonmetallic mineral resources throughout the world and identifies the deposit name, location, commodity, deposit description, geologic characteristics, production, reserves, resources, and references. MRDS data indicates 85 records of known mineral resources in Colusa County. The majority of resources as historic records. The primary resources identified include chromium, copper, mercury, sand/gravel, and stone (Colusa County 2010).

4.12.2 Regulatory Framework

4.12.2.1 Federal

There are no federal regulations that pertain to mineral resources.

4.12.2.2 State

Surface Mining and Reclamation Act

SMARA regulates the mining activities (PRC Section 2710 et seq. and its regulations at 14 CCR Section 3500 et seq.). Under this Act, the California State Mining and Geology Board provides a comprehensive surface mining and reclamation policy to assure that adverse environmental impacts are minimized and mined lands are reclaimed. SMARA also encourages the production, conservation, and protection of the state's mineral resources.

The purpose of this act is to create and maintain an effective and comprehensive surface mining and reclamation policy with regulation of surface mining operations so as to assure that:

1. adverse environmental effects are prevented or minimized and that mined lands are reclaimed to a usable condition which is readily adaptable for alternative land uses;
2. the production and conservation of minerals are encouraged, while giving consideration to values relating to recreation, wildlife, range and forage, and aesthetic enjoyment; and
3. residual hazards to the public health and safety are eliminated. These goals are achieved through land use planning by allowing a jurisdiction to balance the economic benefits of resource reclamation with the need to provide other land uses.

California Geological Survey

The CGS (formally the Division of Mines and Geology) has classified regions of the state according to the presence or absence of significant mineral resources. The land classification is presented in the form of MRZs (DOC 2024c). CGS guidelines for establishing the MRZs are as follows:

- MRZ-1: Areas where available geologic information indicates there is little or no likelihood for presence of significant mineral resources.
- MRZ-2a: Areas underlain by mineral deposits where geologic data indicate that significant measured or indicated resources are present. Areas classified MRZ-2a contain discovered mineral deposits as determined by such evidence as drilling records, sample analysis, surface exposure, and mine information. Land included in the MRZ-2a category is of prime importance because it contains known economic mineral deposits.
- MRZ-2b: Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present. Areas classified MRZ-2b contain discovered mineral deposits that are either inferred reserves as determined by limited sample analysis, exposure, and past mining history or are deposits that presently are sub-economic. Further exploration and/or changes in technology or economics could result in upgrading areas classified MRZ-2b to MRZ-2a.
- MRZ-3a: Areas containing known mineral occurrences of undetermined mineral resource significance. Further exploration within these areas could result in the reclassification of specific localities as MRZ-2a or MRZ-2b.
- MRZ-3b: Areas containing inferred mineral occurrences of undetermined mineral resource significance. Land classified MRZ-3b represents areas in geologic settings that appear to be favorable environments for the occurrence of specific mineral deposits. Further exploration could result in the reclassification of all or part of these areas as MRZ-3a or specific localities as MRZ-2a or MRZ-2b.
- MRZ-4: Areas of no known mineral occurrences where geologic information does not rule out the presence or absence of significant mineral resources.

4.12.2.3 Local

Yolo County Code

Chapter 5. Surface Mining Reclamation, in Title 10 of the Yolo County code (known as the Surface Mining Reclamation Ordinance of Yolo County) ensures reclamation of mined lands to minimize the adverse effects of mining on the environment and to protect public health and safety. It requires that reclamation plans be adapted to site-specific conditions and be designed to reclaim mined areas so as to maximize beneficial uses; in particular, agriculture, wildlife habitat, or recreation.

Yolo County Conservation and Open Space Element

The following is a list of relevant General Plan policies and actions related to mineral resources.

Policy CO-3.1: *Encourage the production and conservation of mineral resources, balanced by the consideration of important social values, including recreation, water, wildlife, agriculture, aesthetics, flood control, and other environmental factors.*

Policy CO-3.2: *Ensure that mineral extraction and reclamation operations are compatible with land uses both onsite and within the surrounding area and are performed in a manner that does not adversely affect the environment.*

Policy CO-3.3: *Encourage the extraction of natural gas where compatible with both onsite and surrounding land uses, and when performed in a manner that does not adversely affect the environment.*

Colusa County Conservation Element

The following is a list of relevant General Plan policies and actions related to mineral resources.

Goal CON-2: *Conserve, protect, and enhance energy, air, and mineral resources.*

Objective CON-2C: *Protect mineral and natural gas resources and avoid land use conflicts from mining and resources extraction activities.*

Policy CON 2-24: *Conserve mineral resources identified by the State to be of regional or statewide significance for mineral resource extraction.*

4.12.3 Mineral Resources (XII) Environmental Checklist and Discussion

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

No Impact.

The Proposed Project would be implemented only along the existing levee; areas in which mineral resource recovery is already prohibited because such activities would undermine the structural integrity of the levees. Therefore, there would be no impact.

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

No Impact.

Ground-disturbing activities would only occur within the levee that are built with fill soils. Mineral resource recovery is already prohibited within levee, and therefore, would not disturb or remove any locally important mineral or gas resources and have no impact in this area.

4.12.4 Mitigation Measures

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

4.13 Noise

4.13.1 Environmental Setting

4.13.1.1 Noise Fundamentals

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

- *Equivalent Noise Level (L_{eq})* is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
- *Day-Night Average (L_{dn})* is a 24-hour average L_{eq} with a 10-dBA "weighting" added to noise during the hours of 10:00 pm to 7:00 am to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.
- *Community Noise Equivalent Level (CNEL)* is a 24-hour average L_{eq} with a 5-dBA weighting during the hours of 7:00 pm to 10:00 pm and a 10-dBA weighting added to noise during the hours of 10:00 pm to 7:00 am to account for noise sensitivity in the evening and nighttime, respectively.

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

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

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

Human Response to Noise

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

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

- Except in carefully controlled laboratory experiments, a change of 1.0 dBA cannot be perceived by humans.
- Outside of the laboratory, a 3.0-dBA change is considered a just-perceivable difference.
- A change in level of at least 5.0 dBA is required before any noticeable change in community response would be expected. An increase of 5.0 dBA is typically considered substantial.

A 10.0-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

Sensitive Noise Receptors

According to the Colusa County General Plan Community Character Element, noise-sensitive land uses are those in which noise can adversely affect what people are doing on the land. For example, residential land uses, where people live, sleep, and study, is generally considered sensitive to noise because noise can disrupt these activities. Churches, schools, and certain kinds of outdoor recreation are also usually considered noise-sensitive land uses as well.

The Project is proposing repairs along two segments of the CBDC levee. The Project Site is located in a rural area of the County and is surrounded by the CBDC and agricultural land. The nearest noise sensitive receptors to the proposed improvements are residences located west of the levee.

4.13.1.2 Vibration Sources and Characteristics

Ground vibration can be measured several ways to quantify the amplitude of vibration produced, including through peak particle velocity (PPV) or root mean square velocity. These velocity measurements measure maximum particle at one point or the average of the squared amplitude of the signal, respectively. Vibration impacts on people can be described as the level of annoyance and can vary depending on an individual's sensitivity. Generally, low-level vibrations may cause window rattling but do not pose any threats to the integrity of buildings or structures.

4.13.1.3 Existing Ambient Noise Environment

The Project Area is located in a rural part of the County surrounded by the CBDC and agricultural land. The main noise source in the Project Area is from agricultural equipment and activities.

The American National Standards Institute (ANSI) Standard 12.9-2013/Part 3 "Quantities and Procedures for Description and Measurement of Environmental Sound – Part 3: Short-Term Measurements with an Observer Present" provides a table of approximate background sound levels in CNEL, daytime L_{eq}, and nighttime L_{eq}, based on land use and population density. The ANSI standard estimation divides land uses into six distinct categories. Descriptions of these land use categories, along with the typical daytime and nighttime levels, are provided in Table 4.13-1. At times, one could reasonably expect the occurrence of periods that are both louder and quieter than the levels listed in the table. ANSI notes, "95% prediction interval [confidence interval] is on the order of ±10 dB." As previously described, the Project is proposing repairs at two locations along the CBDC levee. The Project locations would be considered ambient noise Category 6 and generally experiences noise levels of 42 dBA L_{dn} at a maximum. Furthermore, the Project Site may experience noise levels as low as 34 dBA. However, it is acknowledged that noise levels within the Project Area will fluctuate throughout the year due to different types of agricultural activity.

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

Category	Land Use	Description	People per Square Mile	A-Weighted Decibels (dBA)		
				Typical L_{dn}	Daytime L_{eq}	Nighttime L_{eq}
1	Noisy Commercial & Industrial Areas and Very Noisy Residential Areas	Very heavy traffic conditions, such as in busy, downtown commercial areas; at intersections for mass transportation or other vehicles, including elevated trains, heavy motor trucks, and other heavy traffic; and at street corners where many motor buses and heavy trucks accelerate.	63,840	67	66	58
2	Moderate Commercial & Industrial Areas and Noisy Residential Areas	Heavy traffic areas with conditions similar to Category 1, but with somewhat less traffic; routes of relatively heavy or fast automobile traffic, but where heavy truck traffic is not extremely dense.	20,000	62	61	54
3	Quiet Commercial, Industrial Areas and Normal Urban & Noisy Suburban Residential Areas	Light traffic conditions where no mass-transportation vehicles and relatively few automobiles and trucks pass, and where these vehicles generally travel at moderate speeds; residential areas and commercial streets, and intersections, with little traffic, compose this category.	6,384	57	55	49
4	Quiet Urban & Normal Suburban Residential Areas	These areas are similar to Category 3, but for this group, the background is either distant traffic or is unidentifiable; typically, the population density is one-third the density of Category 3.	2,000	52	50	44
5	Quiet Residential Areas	These areas are isolated, far from significant sources of sound, and may be situated in shielded areas, such as a small-wooded valley.	638	47	45	39

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

Category	Land Use	Description	People per Square Mile	A-Weighted Decibels (dBA)		
				Typical L_{dn}	Daytime L_{eq}	Nighttime L_{eq}
6	Very Quiet Sparse Suburban or rural Residential Areas	These areas are similar to Category 4 but are usually in sparse suburban or rural areas; and, for this group, there are few if any nearby sources of sound.	200	42	40	34

Note: dBA = A-weighted decibel; L_{dn} = Day-Night Average Sound Level; L_{eq} = Equivalent Noise Level
Source: The American National Standards Institute (ANSI) 2013

4.13.2 Noise (XIII) Environmental Checklist and Discussion

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

Less Than Significant Impact.

4.13.2.1 Onsite Construction Noise

Construction noise associated with the Proposed Project would be temporary and would vary depending on the specific nature of the activities being performed. Noise generated would primarily be associated with the operation of off-road equipment for onsite construction activities as well as construction vehicle traffic on area roadways. Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g., site preparation, excavation, paving). Noise generated by construction equipment, including earth movers, pile drivers, and portable generators, can reach high levels. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). During construction, exterior noise levels could negatively affect sensitive land uses in the vicinity of the construction site.

The Project is proposing repairs to two locations along the CBDC levee. The Colusa County Municipal Code Chapter 11A, Noise Regulations, prohibits construction between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, or between 7:00 p.m. and 8:00 a.m. on Saturdays and Sundays. The County does not promulgate a numeric threshold pertaining to the noise associated with construction. This is due to the fact that construction noise is temporary, short term, intermittent in nature, and would cease on completion of the Project.

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

The nearest noise sensitive receptor in proximity to the two repair sites is a rural residence located approximately 7,000 feet (1.4 miles) southwest of 12.7L. The anticipated short-term construction noise levels generated for the necessary equipment for each phase of construction are presented in Table 4.13-2.

Table 4.13-2. Construction Average (dBA) Noise Levels at Nearest Receptors

Construction Phase	Estimated Exterior Construction Noise Level @ Closest Noise Sensitive Receptor (dBA L_{eq})	Construction Noise Standard (dBA L_{eq})	Exceeds Standards?
Clearing and Grubbing	40.6	85	No
Excavation	40.6	85	No
Placing Fill, Compaction, and Levee Grading	40.6	85	No
Gravel Access Road Reconstruction	40.6	85	No

Notes: Construction equipment and phasing provided by the Project proponent. All phases of construction will utilize the same pieces of equipment.
L_{eq} = The equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.

Source: Construction noise levels were calculated by ECORP Consulting using the Federal Highway Administration (FHWA) Roadway Noise Construction Model (2006). Refer to Appendix E for Model Data Outputs.

As shown in Table 4.13-2, construction activities would not exceed the NIOSH construction noise standard for construction noise during any phase of construction experienced by nearest noise-sensitive receptor. Construction noise would result in a less than significant impact.

4.13.2.2 Operational Onsite Stationary Noise

As previously described, The Project is proposing repairs along the CBDC levee. Once construction is complete, the Project would not be a source of operational noise. No impact would occur.

4.13.2.3 Operational Offsite Traffic Noise

Upon completion of construction, there would be no additional traffic on area roadways resulting from the Project. No impact would occur.

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

No Impact.

4.13.2.4 Construction Vibration Analysis

Excessive groundborne vibration impacts result from continuously occurring vibration levels. Increases in groundborne vibration levels attributable to the Project would be primarily associated with short-term, construction-related activities. Construction on the Project Site would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude as the distance from the source increases.

Construction-related ground vibration is normally associated with impact equipment, such as pile drivers and jackhammers, and the operation of some heavy-duty construction equipment, such as dozers and trucks. Vibration decreases rapidly with distance and construction activities would occur throughout the Project Site and would not be concentrated at the point closest to sensitive receptors. Table 4.13-3 summarizes groundborne vibration levels associated with construction equipment.

Table 4.13-3. Representative Vibration Source Levels for Construction Equipment	
Equipment Type	**Peak Particle Velocity at 25 Feet (inches per second)**
Large Bulldozer	0.089
Pile Driver	0.170
Loaded Trucks	0.076
Hoe Ram	0.089
Jackhammer	0.035
Small Bulldozer/Tractor	0.003
Vibratory Roller	0.210

Source: California Department of Transportation (Caltrans) 2020; Federal Transit Administration (FTA) 2018

Colusa County does not regulate vibration associated with construction. However, a discussion of construction vibration is included for full disclosure purposes. For comparison purposes, the Caltrans (2020) recommended standard of 0.3 inches per second PPV with respect to the prevention of structural damage for older residential buildings is used as a threshold. This is also the level at which vibrations may begin to annoy people in buildings.

The nearest offsite structure of concern to the construction site, with regard to groundborne vibrations, is a rural residence located more than 7,000 feet distant from 12.7L (Site A).

Based on the representative vibration levels presented for various construction equipment types in Table 4.13-3 and the construction vibration assessment methodology published by the FTA (2018), it is possible to estimate the potential Project construction vibration levels. The FTA provides the following equation:

$$[PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}]$$

Table 4.13-4 presents the expected Project related vibration levels at a distance of 7,000 feet.

Table 4.13-4. Construction Vibration Levels at 7,000 Feet							
Receiver PPV Levels (in/sec)1					Peak Vibration	Threshold	Exceed Threshold
Large Bulldozer Caisson Drilling, & Hoe Ram	Loaded Trucks	Jackhammer	Small Bulldozer	Vibratory Roller			
0.000	0.000	0.000	0.000	0.000	**0.000**	*0.3*	**No**

Notes: [1]Based on the Vibration Source Levels of Construction Equipment included on Table 4.13-2 (Federal Transit Administration [FTA] 2018).
in/sec = inches per second; PPV = peak particle velocity

As shown in Table 4.13-4, vibration as a result of construction activities would not be perceivable at the nearest residence. No impact would occur.

Operational Vibration Impacts

Project operations would not include the use of any large-scale, stationary equipment that would result in excessive vibration levels; therefore, the Project would not result in ground-borne vibration impacts during operations. For this reason, no impact would occur.

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

No Impact.

There are no public or private airports within two miles of the Project Area. Therefore, construction of the Proposed Project would not affect airport operations nor expose people working in the Project Area to an increased exposure to aircraft noise. No impact would occur.

4.13.3 Mitigation Measures

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

4.14 Population and Housing

4.14.1 Environmental Setting

According to the U.S. Census Bureau (U.S. Census Bureau 2022), which provides estimated population and housing unit demographics by year throughout the state, the estimated population for Colusa County was 21,909 and 8,173 housing units in July 2022. Yolo County is estimated to have a population of 222,018 and 82,463 housing units (U.S. Census Bureau 2022). No housing exists or is planned on the Project Site.

4.14.2 Population and Housing (XIV) Environmental Checklist and Discussion

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

Less Than Significant Impact.

The Project entails repair of existing levees for and would not include any new homes or businesses, nor would it create new permanent employment in the surrounding area that could induce substantial unplanned population growth in neighboring communities and cities. No specific planned development undertakings are dependent on the Project. As such, the Project would not result in a demand for new housing. In addition, the Project would reduce the potential for flooding within the Project Area. Therefore, repairs of the levees would result in a net benefit on the potential for development of new housing in Colusa County. Any impacts would be less than significant.

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

No Impact.

No persons or residences would be displaced or removed as a result of the Project; therefore, the Project would have no impact. Repairs of the levees would reduce the risk of displacement of residents during a flood event.

4.14.3 Mitigation Measures

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

4.15 Public Services

4.15.1 Environmental Setting

Public services include fire protection, police protection, parks and recreation, and schools. Generally, impacts in these areas are related to an increase in population from residential development. Levels of service are generally based on a service-to-population ratio, except for fire protection, which is usually based on a response time.

4.15.1.1 Police Services

Colusa County

The unincorporated areas of Colusa County receive general public safety and law enforcement services from the Colusa County Sheriff's Department. The Sheriff's Department also operates the Office of the Coroner and the County Office of Emergency Services. The Sheriff's Department is responsible for all law enforcement patrol services throughout all areas of the unincorporated County. The municipal police departments serve the cities of Colusa and Williams. Both cities use the county jail for all detentions. Since many law enforcement matters cross jurisdictional lines, the municipal police forces work closely with the Colusa County Sheriff's Department. The Sheriff's Department also provides 24-hour dispatching services for the municipal police departments. The County Sheriff's Department and the police forces of the cities of Colusa and Williams often work in concert for search and rescue efforts.

Yolo County

The Yolo County Sheriff–Coroner Department (Sheriff's Office) provides law enforcement services to the unincorporated areas of Yolo County. The Sheriff's Office is responsible for patrolling the county, administering the county jail and work program, providing security to the Yolo County Court System, providing animal services, and serving as the county coroner. Sheriff Office headquarters is located at 140 Tony Diaz Drive in Woodland. The Sheriff's Office Patrol Section is maintained under the authority of the Yolo County Sheriff's Office Field Operations Division. Deputies serve the communities of Brooks, Capay, Clarksburg, Dunnigan, Esparto, Guinda, Knights Landing, Madison, Rumsey, Yolo, and Zamora, along with the unincorporated county area. Patrol territory is divided into four geographic zones with designated units assigned to each zone. Deputies answer calls for service, provide presence and support to the public, and represent the Sheriff's Office at community events and meetings, and by participating in area programs. Any traffic complaints, concerns or collisions occurring on state highways within the unincorporated area of Yolo County are handled by the California Highway Patrol.

4.15.1.2 Fire Services

Colusa County

Fire protection in Colusa County is provided by six rural fire districts, one city fire department, one joint powers authority, CAL FIRE, and the U.S. Forest Service. The majority of districts are staffed by volunteer firefighters. There are mutual aid agreements between most of the agencies to ensure adequate staff and

equipment are available when a fire occurs. The closest Fire District to the Project site is the Arbuckle/College City Fire Protection District. The District encompasses 123 square miles in the south central part of Colusa County. The fire station is located at 506 Lucas Street in Arbuckle. Staff includes one paid chief, two paid fire fighters, one part-time administrative assistant, and 25 volunteer firefighters. The station includes one command vehicle, one rescue vehicle, one utility/support vehicle, three Type 1 vehicles, two Type 2 vehicles, and a water tender. This station receives approximately 600 calls per year, with nearly 70 percent of those calls for emergency medical services (Colusa County 2010).

Yolo County

There are 18 fire protection districts in Yolo County. The spoils area of the Proposed Project is within the Knights Landing Fire Department jurisdiction. The Knights Landing Fire Department, located at 42115 6th Street in the unincorporated community of Knights Landing, provides volunteer fire protection services, fire suppression, and emergency medical services, and rescue services to the Project Area. It has "automatic aid" agreements with the nearby Dunnigan, Elkhorn, Sutter Basin, and Zamora Fire Protection Districts. The Knights Landing Fire Protection District has 20 volunteer fire fighters and five non-firefighting employees, two fire engines, one grass truck, and one jet boat. The Knights Landing Fire Department is currently able to respond to emergency calls within three to five minutes on average (LSA 2009).

4.15.1.3 Schools

Colusa County is served by six school districts: Colusa Unified School District, Maxwell Unified School District, Pierce Joint Unified School District, and Williams Unified School District. The two repair segments of the Colusa Basin Drainage Canal East Levee are within the Pierce Joint Unified School District. The nearest school is the Lloyd G Johnson Junior High in the City of Arbuckle, a public middle school, approximately 5.0 miles east of the repair segments.

The spoils area for the Proposed Project is within the Woodland Joint Unified School District. The Woodland Joint Unified School District serves the City of Woodland and the surrounding areas, including the towns of Knights Landing, Yolo, and Zamora. The District operates twelve elementary schools, two middle schools, two high schools, a continuation high school, and an adult school (LSA 2009).

4.15.1.4 Parks

No public parks are adjacent or near the Project Area. The closest public park is within the City of Arbuckle, at Balfour Park located at 920 Hall Street, approximately 5 miles away from the Colusa Basin Drainage Canal East Levee that are to be repaired. This park is managed by Arbuckle Parks and Recreation.

4.15.1.5 Other Public Facilities

The Colusa County Library has one main library and six branch libraries. The closest library to the Project site is the Arbuckle Branch Library, at 610 King Street in Arbuckle, California.

4.15.2 Public Services (XV) Environmental Checklist and Discussion

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

Less Than Significant Impact.

4.15.2.1 Fire Protection

Project construction would result in a need for fire protection services to respond to any potential fire or emergency medical service incidents that may occur at the site. Project Site A and B are located in a part of Colusa County that currently receives these services from the Arbuckle/College City Fire Protection District. The Project would not result in the need for new fire personnel or facilities, as services can adequately be provided by existing personnel out of existing facilities. Therefore, this impact is less than significant.

4.15.2.2 Police Services

Project construction would result in a need for police protection services to respond to any potential incidents that may occur at the site. Project Site A and B are located in a part of Colusa County that currently receives police services from the Colusa County Sheriff's Office. The Project would not result in the need for new police personnel or facilities, as services can adequately be provided by existing personnel out of existing facilities. Therefore, this impact is less than significant.

4.15.2.3 Schools

The Project does not propose any housing and would not include any other components that would result in an increased demand for schools. As such, there would be no need for additional facilities to maintain acceptable service ratios for schools. No impact would occur.

4.15.2.4 Parks

The Project does not propose any housing or population that would require additional recreational facilities and would not include any other components that would result in an increased demand for parks. As such, there would be no need for additional facilities to maintain acceptable service ratios for parks. No impact would occur.

4.15.2.5 Other Public Facilities

The Project does not propose any housing or population that would require additional demand on other public services, such as libraries or public buildings. As such, there would be no need for additional facilities to maintain acceptable service ratios. No impact would occur.

4.15.3 Mitigation Measures

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

4.16 Recreation

4.16.1 Environmental Setting

Recreational opportunities are limited in the Project Area. The closest public park is within the City of Arbuckle, at Balfour Park located at 920 Hall Street, approximately 5 miles away from the Colusa Basin Drainage Canal East Levee segments that are to be repaired. This park is managed by Arbuckle Parks and Recreation.

4.16.2 Recreation (XVI) Materials Checklist

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

No Impact.

The deterioration of parkland infrastructure is partly related to use level which is driven by the local population and recreation demand. Given that the Project would not result in a significant or direct population increase, the Project would not generate increased recreational facility use that would lead to

premature deterioration facilities. Therefore, the Proposed Project would not increase the use of park and recreational facilities resulting in substantial physical deterioration. There would be no impact.

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

No Impact.

The Project does not include or allow for the creation of recreational facilities. As such, the Proposed Project will have no impact due to construction and expansion of recreational facilities. There would be no impact.

4.16.3 Mitigation Measures

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

4.17 Transportation

This section of the document describes the existing conditions in the Project Area, the regulatory framework necessary to evaluate potential impacts on transportation from the Project, and potential short-term and long-term impacts that could result from the Project. Impacts from Vehicle Miles Traveled (VMT) generated from the Project and traffic safety are discussed below. Impacts on transit service and on bike paths and trails are also discussed below.

4.17.1 Environmental Setting

4.17.1.1 Roadway System

Roadway classifications for each roadway segment in the Project Area are described in more detail below.

Interstate-5 (I-5) is an important north/south route that in Colusa and Yolo Counties primarily provides for the transportation of goods by trucks. Woodland is the primary trucking center for the agricultural and warehousing industry along I-5 and generates high truck traffic during the harvest seasons. From the Sacramento County line to the Colusa County line, I-5 is a four-lane freeway and provides connections to the communities of Dunnigan, Zamora, and Yolo.

State Route 45 serves as an important north-south two-lane route for agricultural and commercial traffic, roughly paralleling the Sacramento River to the west. The 70-mile-long route connects SR 32 near Hamilton City in Glenn Count, to SR 113 in the town of Knights Landing in Yolo County. Caltrans published a Transportation Concept Report in 2017 detailing the 20-year concept for SR 113 (Caltrans 2017). The concept and ultimate facility for the section in Yolo County is to maintain the existing two-lane

conventional highway. The concept Level of Service (LOS) is D for SR 45 through Yolo County. LOS D generally represents utilization of 60 to 90 percent of roadway capacity. Colusa County classifies the segment of SR 45 in the County as a "minor arterial route," but also identifies it as a "primary transportation corridor" in the County, along with I-5 and SR 20.

Yolo County Line Road, White Road and Tule Road are minor two-lane county roads. They function primarily as collector facilities. Minor two-lane county roads primarily provide access to adjacent land and travel over relatively short distances. Minor two-lane county roads primarily carry local traffic, as compared with major two-lane roads that carry intra-county traffic.

Caltrans has designated all state and federal highways within Colusa and Yolo Counties as truck routes. No county roadways within the unincorporated parts of Yolo County are designated as truck routes (LSA 2009).

4.17.1.2 Proposed Truck Routes

Trucks are currently planned to travel to and from the Spoils Area to deliver fill from Sites A and B. The source of fill used for the Project has not been determined. Regardless of source site, fill deliveries will most likely access Site A via White Road and Tule Road, which can be reached by Interstate 5 or Highway 45. Deliveries to Site B will be accessed via Tule Road and Yolo County Line Road, which can be reached by Interstate 5 or Highway 45.

4.17.2 Regulatory Framework

4.17.2.1 Federal

There are no federal regulations that pertain to transportation and are relevant to this Project.

4.17.2.2 State

There are no state regulations that pertain to transportation and are relevant to this Project.

4.17.2.3 Regional

Sacramento Area Council of Governments

The federal government has designated the Sacramento Area Council of Governments (SACOG) as the Metropolitan Planning Organization for the Sacramento region, including Yolo county. SACOG works with its 28-member cities and counties to conduct transportation infrastructure planning and to provide funding assistance for cities, counties, transit operators, and other entities responsible for providing for the travel needs of the region's residents (SACOG 2019). SACOG generated a regional transportation plan, the 2020 Metropolitan Transportation Plan (MTP)/SCS (SACOG 2019), a "20-year multimodal transportation plan that is financially feasible, achieves health standards for clean air, and addresses statewide climate goals" (SACOG 2019). The four priority policy areas of the MTP/SCS include:

- Build vibrant places for today's and tomorrow's residents;

- Foster the next generation of mobility solutions;
- Modernize the way we pay for transportation infrastructure; and
- Build and maintain a safe, reliable, and multimodal transportation system.

4.17.2.4 Local

Colusa County General Plan

The following goals and policies of the Colusa County 2030 Countywide General Plan (Colusa County 2012) are applicable to the Project:

Policy CIRC 1-5: *Maintain LOS C or better for County roadways and intersections in the unincorporated County.*

Policy CIRC 1-6: *Maintain levels of service on state highways consistent with Caltrans standards, to the extent feasible. .*

Yolo County General Plan

The following goals and policies of the Yolo County 2030 Countywide General Plan (Yolo County 2009) are applicable to the Project:

Policy CI-3.1: *Maintain LOS C or better for roadways and intersections in the unincorporated county. In no case shall land use be approved that would either result in worse than LOS C conditions or require additional improvements to maintain the required LOS, except as specified below. The intent of this policy is to consider LOS as a limit on the capacity of the county's roadways.*

- *SR 45 (Sutter County Line to CR 102) – LOS F is acceptable.*
- *SR 113 (CR 102 to Woodland City Limits) – LOS D is acceptable.*
- *CR 102 (CR 13 to CR 17) – LOS D is acceptable, assuming that passing lanes and appropriate intersection improvements are constructed. The county will secure a fair share towards these improvements from planned development.*
- *CR 102 (CR 17 to the Woodland City Limit) - LOS E is acceptable, assuming that passing lanes and appropriate intersection improvements are constructed. The county will secure a fair share towards these improvements from planned development.*

The following roadways were identified in the Circulation Element as needing spot improvements for portions of the identified segment, including, but not limited to, intersection control and lane configuration improvements, passing lanes and/or wider travel lanes and shoulders:

- CR 102 between CR 13 and Woodland City Limit.

4.17.3 Transportation (XVII) Environmental Checklist and Discussion

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

Less Than Significant Impact With Mitigation Incorporated.

The Project potentially would generate additional traffic along roadways within unincorporated Colusa and Yolo Counties. Offsite import of material fill for levee repair would potentially result in up to 22 truck trips per day on area roadways. In addition, trips associated with approximately 4 workers commuting to and from the job site, periodic offsite transport of debris removed from the Project, and deliveries of equipment, materials, and supplies would also result in a significant number of trips on area roadways per day. Heavy construction traffic could damage area roadways. Construction traffic can also contribute to congestion on local roadways where ingress/egress will occur to the CBDC levee roads over the short-term during implementation of the Project. Therefore, the Project has the potential to conflict with local and regional goals for safe and reliable transportation systems.

If the Project results in a lane closure, implementation of mitigation measure TRANS-1 would require preparation of a Construction Traffic Management Plan to minimize construction traffic impacts on area roadways, and transit routes to the maximum extent feasible. Peak hours would be avoided to the maximum extent, and detours, traffic control, and signage would be implemented to minimize disruption to bicycle facilities and local traffic access points to the Project. Because the Project would be short-term in nature, with implementation of mitigation measure TRANS-1, impacts would be reduced to less than significant with mitigation incorporated.

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

Less Than Significant Impact.

The Project potentially would generate a substantial amount of construction traffic along roadways within unincorporated Colusa and Yolo County over the short term. Import of material fill would potentially result in up to 22 truck trips per day on area roadways. In addition, trips associated with approximately 4 workers commuting to and from the job site, periodic offsite transport of vegetation and spoils removed from the Project, and deliveries of equipment, materials, and supplies would also result in a significant

number of trips on area roadways per day if all were to occur in a single day. However, implementation of the Project would not generate vehicle trips over the long term. Therefore, impacts associated with VMT would be less than significant.

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

Less Than Significant Impact With Mitigation Incorporated.

As discussed under Impact a) above, the substantial number of anticipated truck trips per day on area roadways could create hazardous conditions at ingress and egress points to the Project sites. Without mitigation, safety impacts would be adverse and significant.

However, implementation of a Construction Traffic Management Plan, as described in mitigation measure TRANS-1, would ensure that truck traffic is managed at these intersections and access points with detours, traffic control, and signage to minimize conflicts between truck traffic and normal day-to-day traffic on roadways. With implementation of TRANS-1, impacts would be less than significant with mitigation incorporated.

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

Less Than Significant Impact With Mitigation Incorporated.

Although heavy truck trips during Project construction could create temporary and periodic delays for emergency vehicle access local roads during ingress/egress to Project access points, delays would be less than significant with implementation of the Traffic Management Plan outlined in mitigation measure TRANS-1. TRANS-1 includes construction contractor notification and consultation with emergency service providers to maintain emergency access and facilitate the passage of emergency vehicles on state highways and county streets. Therefore, this impact is less than significant with mitigation incorporated.

4.17.4 Mitigation Measures

TRANS-1: Construction Traffic Management Plan. If any lane closures are required as part of the Project, the construction contractor shall prepare and implement a Construction Traffic Management Plan to manage and plan for any lane closures or detours for roadways or bicycle facilities, and ingress and egress of truck traffic and deliveries of equipment and supplies at the Project access points in Colusa and Yolo Counties. The Construction Traffic

Management Plan shall include proposed times and days of deliveries and material hauling to avoid peak hours to the maximum extent feasible.

4.18 Tribal Cultural Resources

This section describes the affected environment and regulatory setting for Tribal Cultural Resources (TCRs) in the Project Area. The following analysis of the potential environmental impacts related to TCRs is derived primarily from the following sources:

- California NAHC Sacred Lands File Search, January 12, 2024;
- ECORP Consulting, Inc.'s *Confidential Cultural Resources Inventory for the Reclamation District 108 FSRP Sites Project* (Cultural Resources Inventory Report) (ECORP 2024b, Appendix C);
- Regional pre-contact setting;
- Ethnographic overview of the Patwin; and
- Confidential tribal consultation record under AB 52.

TCRs are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe, and which meet specific definitions in state law (PRC Section 21047[a]). While these may share the same forms and characteristics of cultural resources, as described in Chapter 3.5 of this document, these resources have special meaning to Native American tribes. They may also take other forms that do not satisfy the definition of cultural resources or archaeological sites. These can include traditional plant gathering areas, locations used for ritual or spiritual practice, lines of sight, or other areas of sacred space.

State law requires that TCRs be addressed separately from cultural resources and that confidentiality of these resources, as disclosed during tribal consultation under Assembly Bill 52, be maintained. In accordance with Section 21082.3(c)(1) of the PRC, "… information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with subdivision (r) of Section 6254 of, and Section 6254.10 of, the Government Code, and subdivision (d) of Section 15120 of Title 14 of the CCR, without the prior consent of the tribe that provided the information." Therefore, the details of tribal consultation summarized herein are provided in a confidential administrative record and not available for public disclosure without written permission from the tribes. However, all pertinent information necessary to provide substantial evidence for impact determinations is summarized in this section of the IS/MND.

4.18.1 Environmental Setting

4.18.1.1 Ethnographic, Religious, and Cultural Context

Prior to the arrival of European-Americans in the region, indigenous groups speaking more than 100 different languages and occupying a variety of ecological settings inhabited California. Kroeber and others

recognized the uniqueness of California's indigenous groups and classified them as belonging to the California culture area. Kroeber further subdivided California into four subculture areas: Northwestern, Northeastern, Southern, and Central.

When the first European explorers entered the regions between 1772 and 1821, an estimated 100,000 people, about one third of the state's native population, lived in the Central Valley. At least seven distinct languages of Penutian stock were spoken among these populations: Wintu, Nomlaki, Konkow, River Patwin, Nisenan, Miwok, and Yokuts. Common linguistic roots and similar cultural and technological characteristics indicate that these groups shared a long history of interaction. The Southern area encompasses the APE and includes the Patwin.

The Patwin territory included both the River Patwin and Hill Patwin and extended from the southern portion of the Sacramento River Valley to the west of the river, from the town of Princeton south to San Pablo and Suisun bays. As a language, Patwin (meaning "people") is part of the Wintu linguistic family which has three main groups: Southern or Patwin; Central, of Glenn and Tehama counties; and the Northern, of the upper Sacramento, lower Pit, and the upper Trinity drainages. The Hill Patwin territory includes the lower hills of the eastern Coast Range Mountain slope (Long, Indian, Bear, Capay, Cortina, and Napa Valley). Between there and the foothills, the grassy plains were largely unsettled, used mainly as a foraging ground by both valley and hill groups. Patwin pre-contact population numbers are not precise, but Kroeber estimates 12,500 for the Wintu, Nomlaki, and Patwin groups. These numbers reflect groups prior to the 1833 malaria epidemic.

Individual and extended families "owned" hunting and gathering grounds, and trespassing was discouraged without permission. Residence and marriage were generally matrilocal, but unrestricted. Politically, the Patwin were divided into "tribelets," made up of a primary village and a series of outlying hamlets, presided over by a more-or-less hereditary chief. Villages typically included family dwellings, acorn granaries, a sweathouse, and a dance house, owned by the chief. The chief had unrestricted power and presided over economic and ceremonial decisions.

Subsistence activities centered around fishing and hunting of deer, Tule elk, antelope, bear, ducks, geese, quail, turtles, fish, and other small animals. Hunting of deer often took the form of communal drives, with the actual killing of the deer performed by individuals or groups. Decoys were used for attracting such game as deer and ducks. Nets and holding pens were used for fishing, which was also an important part of normal subsistence activities. Types of fish included sturgeon, salmon, perch, chub, sucker, hardhead, pike, trout, steelhead, and mussels. Although acorns were the staple of the Patwin diet, they also harvested sunflower, alfilaria, clover, bunchgrass, wild oak, and yellow flower, which was parched or dried, then pounded into a meal. Buckeye, pine nuts, juniper berries, manzanita berries, blackberries, wild grapes, *Brodiaea* bulbs, and tule roots were also collected. Each village had its own locations for these food sources, and the village chief was in charge of assigning particular families to each collecting area. Game was prepared by roasting, baking, or drying the meat. Tobacco was collected along the river and inhaled, but not cultivated. Salt was scraped off rocks (in the Cortina region) or by burning grass found in the plains.

Patwin houses were built in the form of a dome, using tree branches for the framing, then covered with thatch and earth. House floors were typically dug out and the walls were built up as a mound, with the entrance to the building made through the roof. As described by Kroeber and Johnson the closest village location was Moso, located on the north bank of Cache Creek around the town of Capay. No positive cultural material has been located or observed to support this claim.

One of the most distinctive aspects of the Patwin culture was the cult system, found throughout northern central California. The main feature of the cult was the occurrence of one or more secret societies whose membership was by strict initiation, each with its own series of dances and rituals. Patwin culture is most distinctive in that it possessed three secret societies: the ghost, Hesi, and Kuksu. These involved elaborate ceremonial activities consisting of singing and dancing. Membership included mostly males, beginning around the ages of eight to 16, but on limited occasions, included high status women (Johnson 1978). Everyday Patwin life centered on the rituals performed within the secret societies. Details involving the ceremonies varied, but most had sacred dances requiring careful preparation, costume, and music. These dances could last several days.

The earliest historical accounts of the APE begins with Spanish mission registers of baptisms, marriages, and deaths of Indians. By 1800, Native Americans were taken from the Patwin settlement of Aguastos in the south-central area, and from other villages, by emissaries of Mission Dolores. In addition, missions San Jose and Sonoma actively proselytized the southern Patwin. Between the 1830s and 1840s, both Mexicans and Americans rapidly overtook the Patwin territory under the authority of the Mexican government.

The Spanish arrived on the central California coast in 1769, and by 1776 had been explored by José Canizares. In 1808, Gabriel Moraga crossed into the territory, and in 1813 a major battle was fought between the Miwok and the Spaniards near the mouth of the Cosumnes River. In 1833, an epidemic, probably malaria, raged through the Sacramento Valley, killing an estimated 75 percent of the native population. The discovery of gold in 1848 at Sutter's Mill, near the Nisenan village of Colluma (now Coloma) on the South Fork of the American River, drew thousands of miners into the area, and led to widespread killing and the virtual destruction of traditional Native American cultures.

4.18.2 Regulatory Framework

4.18.2.1 Assembly Bill 52

In 2015, AB 52 amended CEQA to require that: 1) a lead agency provide notice to those California Native American tribes that requested notice of projects proposed by the lead agency; and 2) for any tribe that responded to the notice within 30 days of receipt with a request for consultation, the lead agency must consult with the tribe. Topics that may be addressed during consultation include TCRs, the potential significance of project impacts, type of environmental document that should be prepared, and possible mitigation measures and project alternatives.

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

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

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

    a. included or determined to be eligible for inclusion in the CRHR; and/or

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

    c. a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

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

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

In accordance with Section 21082.3(c)(1) of the PRC, "… information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with subdivision (r) of Section 6254 of, and Section 6254.10 of, the Government Code, and subdivision (d) of Section 15120 of Title 14 of the CCR, without the prior consent of the tribe that provided the information." Therefore, the details of tribal consultation summarized herein are provided in a confidential administrative record and not available for public disclosure without written permission from the tribes.

4.18.3 Tribal Cultural Resources (XVIII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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 PRC 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 PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.	☐	☒	☐	☐

Less Than Significant Impact With Mitigation Incorporated.

Information about TCRs was drawn from: 1) the results of a search of the Sacred Lands File of the NAHC; 2) existing ethnographic information about pre-contact lifeways and settlement patterns; 3) information on archaeological site records obtained from surveys of the Project Area and the California Historical Resources Information System; and 4) the tribal consultation record under AB 52 for the Project.

4.18.3.1 Sacred Lands File Search

A search of the NAHC Sacred Lands File was requested on January 12, 2024. The NAHC responded that the Sacred Lands File search was negative, which means there were no resources listed on the Sacred Lands File recorded near the Project Area.

4.18.3.2 Archaeological Site Records

The entire Project Area was subjected to an archaeological survey and records search review. As mentioned in Section 4.5, Cultural Resources, of this IS/MND, the only resource found within the Project boundaries was one historic-period canal, which was found not to be eligible.

Additionally, because of the soil and geological data for the Project area was perennial swampland during pre-contact period, it would indicate a relatively low probability for buried pre-contact historical resources. However, the potential always remains, so the Project has implemented mitigation measure CUL-1 in the event of unanticipated discoveries.

4.18.3.3 Tribal Consultation

At the time RD 108 was ready to initiate CEQA review, it had received written requests to receive Project notices from the following three California Native American Tribes, which identified themselves as being traditionally and culturally affiliated with the lands subject to RD 108 jurisdiction:

- UAIC;
- Yocha Dehe Wintun Nation (YDWN); and
- Wilton Rancheria

RD 108 sent an initial notification letter via certified mail on September 11, 2024, to the YDWN. An initial consultation letter was submitted via the portal for the UAIC and via email to the Wilton Rancheria. The initial consultation letter provided tribes with Project information and an invitation to consult on the Project. RD 108 requested responses to the offer to consult within 30 days of the receipt of the letter. On September 11, 2024, the United Auburn Indian Community responded that the project fell outside of UAIC's area of traditional and cultural affiliation, and did not want to consult. On October 30, 2024, the Yocha Dehe Wintun Nation responded and formally requested to consult. The Wilton Rancheria group did not respond.

On November 19, 2024 RD 108 met with the Yocha Dehe Wintun Nation, and they requested that cultural awareness training be provided to all relevant project personnel and construction workers, which has been included as mitigation measure TCR-1. Additionally, they requested that the Burial Treatment Protocol document be included within this IS/MND. This has been included as Appendix F to this document. Copies of all correspondence are documented in confidential Appendix C.

Therefore, consultation with the Yocha Dehe Wintun Nation tribe has concluded and mitigation measure TCR-1 has been included. Any impacts to tribal cultural resources would be less than significant with mitigation incorporated.

4.18.4 Mitigation Measures

TCR-1: **Tribal Cultural Resources- Cultural Awareness Training:** The following mitigation measure is intended to address the cultural sensitivity of the project area by including a Worker Environmental Awareness Program for relevant project personnel and construction workers.

- The lead agency shall require the applicant/Contractor to provide a tribal cultural resources sensitivity and awareness training program (Worker Environmental Awareness Program [WEAP]) for all personnel involved in project construction, including field consultants and construction workers, at their own expense. The WEAP shall be developed in coordination with interested Native American Tribes.

- The WEAP shall be conducted before any project-related construction activities begin at the project site. The WEAP will include relevant information regarding sensitive cultural resources and tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The WEAP will also describe appropriate avoidance and impact minimization measures for cultural resources and tribal cultural resources that could be located at the project site and will outline what to do and who to contact if any potential cultural resources or tribal cultural resources are encountered. The WEAP will emphasize the requirement for confidentiality and culturally appropriate treatment of any discovery of significance to Native Americans and will discuss appropriate behaviors and responsive actions, consistent with Native American tribal values. The training may be done in coordination with the project archaeologist.
- All ground-disturbing equipment operators shall be required to receive the training and sign a form that acknowledges receipt of the training.

4.19 Utilities and Service Systems

4.19.1 Environmental Setting

4.19.1.1 Water Service

Colusa County

Colusa County relies on groundwater and surface water, with all domestic water systems using groundwater, and most irrigation systems using surface water. The Project Site does not involve any residential or commercial uses and does not rely on any service water, as it is a manmade canal that conveys stormwater runoff and agricultural return flows from the Colusa Basin watershed and discharges to the Sacramento River at Knights Landing. Any potable water service to surrounding uses would be from domestic wells.

4.19.1.2 Wastewater

Wastewater in Colusa County is treated and disposed of using one of several methods. The primary methods are onsite disposal and centralized disposal. There are five communities in the County served by centralized wastewater disposal systems: Arbuckle, Maxwell, Princeton, and the Cities of Colusa and Williams. The areas served by onsite systems are generally more rural or agricultural in nature. The Project Site does not involve any residential or commercial uses and does not rely on any wastewater services, as it is a manmade canal that conveys stormwater runoff and agricultural return flows from the Colusa Basin watershed and discharges to the Sacramento River at Knights Landing. Any wastewater service to surrounding uses would be from on-site systems, commonly referred to as septic systems.

4.19.1.3 Solid Waste

Residential and commercial garbage pickup is provided by Recology Butte Colusa Counties. Service is provided to the cities of Colusa and Williams, as well as the unincorporated communities of Arbuckle, Maxwell, and Princeton (Recology 2024). Garbage picked up from areas east of the Tehama-Colusa Canal are taken to the Maxwell Transfer Station, while garbage picked up from areas west of the Tehama-Colusa Canal is taken directly to the Stonyford Disposal Site (Colusa County 2012).

The Maxwell Transfer Station is located on SR 99 south of the community of Maxwell. It is a solid waste transfer station that also accepts green waste. This facility accepts residential and commercial green waste for composting. Green waste may consist of leaves, branches, twigs, soils, or plants (Recology 2024).

Additionally, vegetation waste generated from the Project could be accepted at the Woodland Biomass Power, LLC biomass power plant at 1786 East Kentucky Avenue in Woodland. The plant utilizes 180,000 tons of woody biomass fuel annually: that creates electricity to meet the needs of 25,000 homes. All renewable energy generated at Woodland Biomass Power is sold to Pacific Gas & Electric under a Power Purchase Agreement. The plant's fuel comes from a variety of sources, including wood chips, urban wood waste, logs from forest thinning, tree/orchard trimmings, and agricultural waste, such as nut shells and fruit pits. The plant also offers the local community a free drop off program to dispose of compliant wood waste. Woodland Biomass utilizes 50,000 or more tons of fuel a year that would have gone to a landfill or open field burned (California Biomass Energy Alliance 2024).

4.19.2 Regulatory Framework

4.19.2.1 Federal

There are no federal regulations that pertain to utilities and are relevant to this Project.

4.19.2.2 State

Water Supply

California Department of Water Resources

The DWR is responsible for the management and regulation of water usage, including the delivery of water to two-thirds of California's population through the nation's largest state-built water development and conveyance system, the State Water Project. Working with other agencies and the public, DWR develops strategic goals and near-term and long-term actions to conserve, manage, develop, and sustain California's watersheds, water resources, and water management systems. DWR also works to prevent and respond to floods, droughts, and catastrophic events that would threaten public safety, water resources and management systems, the environment, and property.

Urban Water Management Planning Act

In 1983, the California legislature enacted the Urban Water Management Planning Act (Water Code Section 10610–10656). This act states that every urban water supplier that provides water to 3,000 or

more customers, or that provides over 3,000 acre feet per year, should make every effort to ensure the appropriate level of reliability in its water service to meet the needs of its various categories of customers during normal, dry, and multiple-dry years. This act requires that urban water suppliers adopt an Urban Water Management Plan at least once every five years and submit it to the DWR.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act established a new structure for managing California's groundwater resources at the local level by local agencies. This act required Groundwater Sustainability Agencies to form in the state's high- and medium-priority basins and subbasins by June 30, 2017. The California Water Code states that a Groundwater Sustainability Agency shall have five years from the date of reprioritization to be managed under a Groundwater Sustainability Plan. The planning deadline for California's first round of Groundwater Sustainability Plan was January 31, 2020, for basins subject to critical conditions of overdraft, and January 31, 2022, for all other high- and medium-priority basins.

Statewide Water Conservation Act of 2009 (Senate Bill X7-7)

In November 2009, the California state legislature passed SB X7-7 requiring a 20 percent reduction in per capita urban water use by 2020, with an interim target of 10 percent in 2015. The legislation required urban water users to develop consistent water use targets and to use those targets in their Urban Water Management Plans.

Assembly Bill (AB) 1668 and Senate Bill 606

AB 1668 and SB 606 establish guidelines for efficient water use and a framework for the implementation and oversight of the new standards, which must be in place by 2022. The two bills strengthen the state's water resiliency in the face of future droughts.

Solid Waste

California Department of Resources Recycling and Recovery (CalRecycle); formerly the California Integrated Waste Management Board)

CalRecycle oversees, manages, and monitors waste generated in California. It provides limited grants and loans to help California cities, counties, businesses, and organizations meet the state waste reduction, reuse, and recycling goals. CalRecycle develops, manages, and enforces waste disposal and recycling regulations, including AB 939 and SB 1016.

Assembly Bill (AB) 939

AB 939 (PRC 41780) requires cities and counties to prepare Integrated Waste Management Plans (IWMPs) and to divert 50 percent of solid waste from landfills beginning in calendar year 2000 and each year thereafter. AB 939 also requires cities and counties to prepare Source Reduction and Recycling Elements (SRRE) as part of their IWMPs. These SRRE is designed to develop recycling services to achieve diversion goals, stimulate local recycling in manufacturing, and stimulate the purchase of recycled products.

Senate Bill 1016

SB 1016 requires that the 50-percent solid waste diversion requirement established by AB 939 be expressed in pounds per person per day. SB 1016 also changed the CalRecycle review process for each municipality's IWMP. The CalRecycle Board reviews a jurisdiction's compliance with diversion rate targets in accordance with a specified schedule.

4.19.2.3 Local

Wastewater

Colusa County Public Services and Facilities Element

Objective PSF-1B: Provide safe, reliable, and environmentally sound wastewater services to existing County land uses and areas of planned growth.

Yolo County Public Services and Facilities Element

Goal PF-1: Wastewater Management. Provide efficient and sustainable solutions for wastewater collection, treatment, and disposal.

Policy PF-1.1: Require discretionary projects to demonstrate adequate long-term wastewater collection, treatment, and disposal capacity, including full funding for land acquisition, facility design and construction, and long-term operations and maintenance for needed wastewater treatment and disposal facilities. Where such funding is dependent upon a community vote, approval of the project by the county shall be contingent upon a successful voting outcome.

Policy PF-1.8: Promote 200-year flood protection for all wastewater treatment facilities.

Water Supply

Integrated Regional Water Management Plan (Colusa County)

The six counties of the Northern Sacramento Valley have been working together for over 10 years to lay the foundation for an integrated regional plan to address water-related issues such as economic health and vitality; water supply reliability; flood, stormwater and flood management; water quality improvements; and ecosystem protection and enhancement. The counties have completed the development of a valley-wide Integrated Regional Water Management Plan, and have committed to continuing the efforts of regional water management through this plan.

The Integrated Regional Water Management (IRWM) is a collaborative effort to enhance coordination of the water resources in a region. IRWM involves multiple agencies, stakeholders, tribes, individuals, and groups to address water-related issues and offer solutions which can provide multiple benefits to the

region. Representatives of the six counties are working in partnership with community stakeholders, tribes, and the public to identify the water-related needs of the region. This information was used to develop goals and objectives of the IRWM Plan, and the identification of projects and programs to be included in the Plan. The Plan was adopted in April, 2014, and will better position the region and local partners to receive funding for high-priority projects (Northern Sacramento Valley 2014).

Colusa County Public Services and Facilities Element

Policy PSF 1-8: *Require proof of an adequate (as defined by the County Environmental Health Division) potable water supply to serve the entire project prior to approval of any division of land use or permit.*

Integrated Regional Water Management Plan (Yolo County)

In 2007, the county adopted the Integrated Regional Water Management Plan (IRWMP), which is a multiagency effort to coordinate water policies among the various jurisdictions of Yolo County (LSA 2009). The Water Resources Association of Yolo County, in conjunction with the DWR, developed the IRWMP. The IRWMP serves as an update to the county's 1992 water management plan, addressing major topics, such as water supply, water quality, flood management, enhancement of aquatic and riparian habitat, and improvement of the county's recreational opportunities. Other water supply and quality issues that Yolo County must address include increasingly stringent water quality regulations, availability of adequate water supplies during severe drought conditions, subsidence problems as a result of groundwater overdraft, rising costs of providing water services, and increasingly complex and expensive regulatory compliance. Many of these issues have been addressed through the IRWMP (Water Resources Association of Yolo County 2007 and Yolo Subbasin Groundwater Agency 2024).

Yolo County Conservation and Open Space Element

Policy CO-5.3: *Strive to manage the county's groundwater resources on a sustainable yield basis that can provide water purveyors and individual users with reliable, high-quality groundwater to serve existing and planned land uses during prolonged drought periods.*

Yolo County Agriculture and Economic Development Element

Policy AG-2.1: *Protect areas identified as significantly contributing to groundwater recharge from uses that would reduce their ability to recharge or would threaten the quality of the underlying aquifers.*

Solid Waste

Colusa County Code, Chapter 32: Solid Waste Management

As part of the State of California program for solid waste management and resource recovery and for the preservation of health safety, and wellbeing of the public, the County has determined that is in the it is in the public interest that the County make provisions for solid waste handling services. Chapter 32 of the

Colusa County Code contains specific requirements related to: Pre-collection and storage of solid waste removal time periods Waste ownership and responsibilities Waste collection Transfer station services Waste disposal, and Solid waste handling.

Colusa County Public Services and Facilities Element

Policy PSF 2-3: *Continue to implement and enforce Chapter 32: Solid Waste Management, of the Colusa County Municipal Code*

Policy PSF 2-6: *Encourage the salvage, re-use and/or recycling of demolition and construction material on all construction sites and encourage the re-use of salvage material in project construction.*

Yolo County Integrated Waste Management Plan.

The California Integrated Waste Management Act of 1989 requires each county to prepare a County Integrated Waste Management Plan (CIWMP). Yolo County's CIWMP includes the following documents, the SRRE, the Household Hazardous Waste Element, and the Non-disposal Facility Element for Yolo County and the cities of Davis, West Sacramento, Winters, and Woodland, plus the Countywide Siting Element and the County Summary Plan (LSA 2009). The CIWMP documents cover the following issues:

- County demographics;
- Waste quantities generated in the county;
- Funding sources for administration of the countywide siting element and summary plan;
- Administrative responsibilities for the plan;
- Program implementation;
- Permitted disposal capacity and quantities of waste disposed of in the county;
- Available markets for recyclable materials; and
- Plan implementation schedule.

The Integrated Waste Management Act requires each city and county to review its SRRE or the CIWMP at least once every 5 years.

Yolo County Code

Title 2, Chapter 7 of the Yolo County Code addresses litter and contaminants. The code governs the disposal of solid waste generated by residential, commercial, and industrial properties within Yolo County (LSA 2009). On June 24, 2008, the Yolo County Board of Supervisors adopted a Construction and Demolition Debris Recycling and Diversion Ordinance (Yolo County Code Title 6, Chapter 16) that requires construction, demolition, and renovation projects to dispose of their job waste in an environmentally sustainable manner. This ordinance is in accordance with AB 939, which requires local jurisdictions to divert 50 percent of discarded materials from the landfill.

Yolo County Public Facilities and Services Element

Policy PF-9.1: *Meet or exceed state waste diversion requirements.*

Policy PF-9.2: *Manage property to ensure adequate landfill space for existing and planned land uses.*

Policy PF-9.3: *Employ innovative strategies to ensure efficient and cost-effective solid waste and other discarded materials collection, disposal, transfer and processing.*

Policy PF-9.4: *Prioritize disposal and processing capacity at the landfill for waste materials generated within Yolo County, but accept waste materials from outside the county when capacity is available and the rates cover the full cost of disposal and processing.*

Policy PF-9.8: *Require salvage, reuse or recycling of construction and demolition materials and debris at all construction sites.*

Policy PF-9.9: *Encourage use of salvaged and recycled materials in construction.*

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

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

No Impact.

The Project would not require the use of existing municipal water or wastewater services. Portable toilets and a portable water supply would be utilized for workers. Most of the construction equipment would operate on diesel fuel. Any use of electricity would be minimal and short-term in nature during the course of implementing the Project. Therefore, the Project would not result in the need to increase or expand any infrastructure or facilities for utilities or service systems. There would be no impact.

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

Less Than Significant Impact.

The Project would not require the use of the existing municipal water service. A portable water supply would be utilized for project activities (e.g., for dust control and for workers). The Project would have a minimal demand for water occurring over a short duration. Therefore, impacts would be less than significant.

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

Less Than Significant Impact.

The Project would not require the use of the existing municipal wastewater services. Portable toilets would be utilized for construction workers. The Project would have a minimal demand on wastewater services occurring over a short duration. Therefore, impacts would be less than significant.

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

Less Than Significant Impact.

Most of the soil excavated for the Project would be reused on the site. The only potential generation of solid waste would come during construction, however, this amount would be negligible and would cease upon completion of the Proposed Project.

The Maxwell Transfer Station is the closest solid waste disposal to the Project. The Maxwell Transfer Station has a limit of 180 tons per day (CalRecycle 2024). However, the daily volume of removed soil or

debris from the Project is not expected to comprise a significant percent of the daily disposal limit of the landfill under a worst-case scenario. Any impacts would be less than significant.

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

Less Than Significant Impact.

As discussed above, beneficial reuse of the removed soil would be implemented to the maximum extent feasible as construction fill. If reuse was not possible, then it would be transferred for disposal at the Maxwell Transfer Station. Therefore, the Project would meet the requirements of AB 939 and the goals of the Yolo County Division of Integrated Waste Management, as well as the goals and policies and municipal code of both Colusa County and Yolo County. Therefore, impacts would be less than significant.

4.19.4 Mitigation Measures

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

4.20 Wildfire

This section of the document describes the existing conditions in the Project Area, the regulatory framework necessary to evaluate potential impacts on wildfire from the Project, and potential short-term and long-term impacts that could result from the Project. Impacts from the Project on the risk of wildfire and wildfire management in the area are discussed below.

4.20.1 Environmental Setting

CAL FIRE provides fire protection services for privately owned wildlands, as well as emergency services, in 36 of the state's 58 counties via contracts with local governments (CAL FIRE 2024a).

CAL FIRE has established SRAs or "lands exclusive of cities and federal lands regardless of ownership, classified by the State Board of Forestry as areas in which the primary financial responsibility for preventing and suppressing fires is that of the state. These are lands covered wholly or in part by timber, brush, undergrowth, or grass, whether of commercial value or not, which protect the soil from erosion, retard runoff of water or accelerated percolation, and lands used principally for range or forage purpose" (CAL FIRE 2024a).

CAL FIRE has also established FHSZs in SRAs, which are mapped areas that designate zones (based on factors such as fuel, slope, and fire weather) with varying degrees of fire hazard (i.e., moderate, high, and very high). FHSZ maps evaluate wildfire hazards, which are physical conditions that create a likelihood that an area will burn over a 30- to 50-year period (CAL FIRE 2024b). Moderate, high, and very high FHSZs are

found in areas where the state has financial responsibility for fire protection and prevention (SRAs). In addition, Very High FHSZs have been established in Local Responsibility Areas.

The areas within Colusa and Yolo Counties in or near the Project Area are not within an SRA (CAL FIRE 2023). In addition, there are no FHSZs in or adjacent to the Project Area. The nearest FHSZs are located approximately 20 miles to the west, in the Capay Hills. The Project Site does contain some wooded riparian areas along the banks of the CBDC, but it is not surrounded by wildlands or forest, limiting fire spread.

4.20.2 Regulatory Framework

4.20.2.1 Federal

There are no relevant policies or regulations pertaining to wildfire management at the federal level.

4.20.2.2 State

California Fire Code (Title 24, Part 9, California Code of Regulations)

The California Fire Code incorporates the Uniform Fire Code with necessary California amendments. The CBC requires that new buildings located in any FHSZ within SRAs, any local agency in a Very High FHSZ, or any Wildland-Urban Interface Fire Area, designated by the enforcing agency for which an application for a building permit is submitted, comply with all sections of the California Fire Code.

4.20.2.3 Local

Colusa County Safety Element

Objective SA 1G: Minimize Risks to Human Life and Property from Fire in both Developed and Undeveloped Areas of the County.

Policy SA 1-43: Reduce potential fire hazards through management and conservation of forested lands and fuel management in wildland areas.

Yolo County Public Facilities and Services Element

Policy PF-5.3: Require assertive fire protection measures in all development to supplement limited rural fire district resources.

Policy PF-5.8: Anticipate and adapt to potential changes in frequency and severity of wildfires resulting from predicted effects of global warming.

Action PF-A29: Require that new development comply with all state and local requirements within the SRA. (Policy PF-5.3)

4.20.3 Wildfire (XX) Environmental Checklist and Discussion

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐

Less Than Significant Impact With Mitigation Incorporated.

The Project Site is not in an area designated by CAL FIRE as an SRA or FHSZ (CAL FIRE 2024b). Although the proposed truck routes for the Project, are likely to serve as evacuation routes for the residents of the unincorporated communities of Yolo County and Colusa County, the Project would be required to implement a traffic management plan, as described in mitigation measure TRANS-1, that would reduce traffic impacts in the event of an emergency and evacuation order. In addition, the Project would be short term in nature. Therefore, the Project would have a less than significant impact with mitigation incorporated on emergency evacuations.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒

No Impact.

The Project Site is not in an area designated by CAL FIRE as an SRA or FHSZ (CAL FIRE 2024b). Furthermore, no Very High FHSZs are located nearby. There would be no impact with implementation of the Proposed Project.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒

No Impact.

The Project Site is not in an area designated by CAL FIRE as an SRA or FHSZ. Furthermore, no Very High FHSZs are located nearby. Also, the Project would not require the installation of any new infrastructure. Thus, the Project would have no impact.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

No Impact.

The Project Site is not in an area designated by CAL FIRE as an SRA or FHSZ. Furthermore, no Very High FHSZs are located nearby. Also, the Project would not involve construction of structures. Thus, the Project would have no impact in this area.

4.20.4 Mitigation Measures

No new mitigation measures are required, please see section 4.17 Transportation, for the TRANS-1 mitigation measure.

4.21 Mandatory Findings of Significance

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

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

Less Than Significant With Mitigation Incorporated.

Section 4.4 Biological Resources describes how the Project has the potential to impact special-status plants and animals, including the northwestern pond turtle, giant garter snake, Swainson's hawk, blue heron, western burrowing owl, pallid bat, and other species protected by federal and state regulations. Section 4.4 also describes how the Project has the potential impact to waters of the US. With implementation of mitigation measures BIO-1 through BIO-10, these potential impacts to biological resources will be reduced to less than significant levels.

Section 4.5 Cultural Resources describe how the Project would have potential to impact cultural resources. However, with implementation of mitigation measures CUL-1, this potential impact would be reduced to a level that is considered less than significant.

Section 4.7 Geology and Soils describes how future development of the site may result in the potential to impact paleontologically sensitive resources. Mitigation measure GEO-1 would reduce this impact to less than significant with mitigation incorporated.

Section 4.18 Tribal Cultural Resources describes how future development of the site may result in the potential to impact tribal cultural resources. Mitigation measure TCR-1 would reduce this impact to less than significant with mitigation incorporated.

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

Less Than Significant Impact With Mitigation Incorporated.

Implementation of the Project, in conjunction with other approved or pending undertakings in the region, including, but not limited to, other levee repairs along 99 river miles of waterways of the Sacramento River Flood Control System, has the potential to result in cumulatively considerable impacts to the physical environment, especially to biological resources. However, the implementation of Project-specific mitigation measures proposed in the relevant subsections of this document would ensure that the Project would have a less than considerable contribution to cumulative impacts on these resources in the region. Therefore, potential cumulative impacts would be reduced to a level that is considered less than significant with mitigation incorporated.

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

Less Than Significant Impact With Mitigation Incorporated.

Section 4.9 Hazards and Hazardous Materials describes the potential for adverse impacts to workers and nearby residents from reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Mitigation measure HAZ-1 would reduce this impact to a less than significant level. Section 4.16 describes that Project heavy-duty truck traffic would contribute to congestion on local roadways, particularly if the Project needed to close a lane, which would result in potential conflicts with local and regional goals for safe and reliable transportation systems and impacts to emergency access. However, mitigation measure TRANS-1 would reduce this impact to a less than significant with mitigation incorporated.

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LIST OF APPENDICES

APPENDIX A

Air Quality/GHG Use Model Data Outputs for the
RD 108 Slope Stability FSRP Sites Project

ECORP Consulting, Inc.

August 2024

RD 108 Detailed Report

Table of Contents

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	RD 108
Construction Start Date	8/1/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	1.20
Location	39.00101759556679, -121.99715094581377
County	Colusa
City	Unincorporated
Air District	Colusa County APCD
Air Basin	Sacramento Valley
TAZ	227
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.26

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Asphalt Surfaces	8.00	1000sqft	12.0	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.37	3.67	28.6	29.3	0.10	1.06	7.48	8.54	0.98	3.61	4.59	—	11,648	11,648	0.37	0.49	6.73	11,810
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.64	4.07	22.5	23.5	0.08	0.95	7.00	7.95	0.87	3.48	4.35	—	8,907	8,907	0.33	0.21	0.07	8,977
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.87	0.74	4.82	5.19	0.01	0.20	0.79	0.99	0.19	0.39	0.57	—	1,624	1,624	0.06	0.04	0.20	1,636
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.16	0.14	0.88	0.95	< 0.005	0.04	0.14	0.18	0.03	0.07	0.10	—	269	269	0.01	0.01	0.03	271

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	4.37	3.67	28.6	29.3	0.10	1.06	7.48	8.54	0.98	3.61	4.59	—	11,648	11,648	0.37	0.49	6.73	11,810

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	4.64	4.07	22.5	23.5	0.08	0.95	7.00	7.95	0.87	3.48	4.35	—	8,907	8,907	0.33	0.21	0.07	8,977
2026	4.54	3.99	17.6	21.6	0.07	0.73	0.21	0.94	0.67	0.05	0.72	—	7,631	7,631	0.31	0.07	0.02	7,659
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.87	0.74	4.82	5.19	0.01	0.20	0.79	0.99	0.19	0.39	0.57	—	1,624	1,624	0.06	0.04	0.20	1,636
2026	0.14	0.12	0.55	0.68	< 0.005	0.02	0.01	0.03	0.02	< 0.005	0.02	—	239	239	0.01	< 0.005	0.01	240
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.16	0.14	0.88	0.95	< 0.005	0.04	0.14	0.18	0.03	0.07	0.10	—	269	269	0.01	0.01	0.03	271
2026	0.03	0.02	0.10	0.12	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	39.6	39.6	< 0.005	< 0.005	< 0.005	39.7

3. Construction Emissions Details

3.1. Clearing and grubbing (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.19	3.52	25.4	27.3	0.08	1.01	—	1.01	0.93	—	0.93	—	8,827	8,827	0.36	0.07	—	8,857
Dust From Material Movement	—	—	—	—	—	—	6.58	6.58	—	3.37	3.37	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.10	0.70	0.75	< 0.005	0.03	—	0.03	0.03	—	0.03	—	242	242	0.01	< 0.005	—	243
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.13	0.14	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	40.0	40.0	< 0.005	< 0.005	—	40.2
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.08	1.43	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	237	237	0.01	0.01	0.87	241
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.05	3.15	0.58	0.02	0.05	0.70	0.74	0.05	0.19	0.24	—	2,584	2,584	< 0.005	0.41	5.86	2,712
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.89	5.89	< 0.005	< 0.005	0.01	5.98
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	70.8	70.8	< 0.005	0.01	0.07	74.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.98	0.98	< 0.005	< 0.005	< 0.005	0.99
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.7	11.7	< 0.005	< 0.005	0.01	12.3

3.3. Excavation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.74	3.14	21.3	22.2	0.07	0.93	—	0.93	0.86	—	0.86	—	7,836	7,836	0.32	0.06	—	7,863
Dust From Material Movement	—	—	—	—	—	—	6.56	6.56	—	3.37	3.37	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.74	3.14	21.3	22.2	0.07	0.93	—	0.93	0.86	—	0.86	—	7,836	7,836	0.32	0.06	—	7,863

Dust From Material Movement	—	—	—	—	—	—	6.56	6.56	—	3.37	3.37	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	1.75	1.83	0.01	0.08	—	0.08	0.07	—	0.07	—	644	644	0.03	0.01	—	646
Dust From Material Movement	—	—	—	—	—	—	0.54	0.54	—	0.28	0.28	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.32	0.33	< 0.005	0.01	—	0.01	0.01	—	0.01	—	107	107	< 0.005	< 0.005	—	107
Dust From Material Movement	—	—	—	—	—	—	0.10	0.10	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.08	1.43	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	237	237	0.01	0.01	0.87	241
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.02	1.05	0.19	0.01	0.02	0.23	0.25	0.02	0.06	0.08	—	861	861	< 0.005	0.14	1.95	904

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.10	1.02	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	209	209	0.01	0.01	0.02	212
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.02	1.14	0.20	0.01	0.02	0.23	0.25	0.02	0.06	0.08	—	862	862	< 0.005	0.14	0.05	903
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.7	17.7	< 0.005	< 0.005	0.03	17.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	70.8	70.8	< 0.005	0.01	0.07	74.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.93	2.93	< 0.005	< 0.005	0.01	2.97
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.7	11.7	< 0.005	< 0.005	0.01	12.3

3.5. Placing Fill, Compaction, and Levee Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.45	2.06	14.9	16.5	0.02	0.66	—	0.66	0.61	—	0.61	—	2,244	2,244	0.09	0.02	—	2,251
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.22	1.36	< 0.005	0.05	—	0.05	0.05	—	0.05	—	184	184	0.01	< 0.005	—	185
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.22	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30.5	30.5	< 0.005	< 0.005	—	30.6
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Gravel Access Road Reconstruction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.49	2.94	18.8	20.7	0.07	0.81	—	0.81	0.74	—	0.74	—	7,418	7,418	0.30	0.06	—	7,443
Paving	1.05	1.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	0.96	1.05	< 0.005	0.04	—	0.04	0.04	—	0.04	—	377	377	0.02	< 0.005	—	379
Paving	0.05	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.17	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	62.5	62.5	< 0.005	< 0.005	—	62.7
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.10	1.02	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	209	209	0.01	0.01	0.02	212
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.9	10.9	< 0.005	< 0.005	0.02	11.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.81	1.81	< 0.005	< 0.005	< 0.005	1.84
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Gravel Access Road Reconstruction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	3.40	2.86	17.5	20.7	0.07	0.73	—	0.73	0.67	—	0.67	—	7,427	7,427	0.30	0.06	—	7,452
Paving	1.05	1.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.55	0.65	< 0.005	0.02	—	0.02	0.02	—	0.02	—	233	233	0.01	< 0.005	—	233
Paving	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.10	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.5	38.5	< 0.005	< 0.005	—	38.6
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.09	0.95	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	205	205	< 0.005	0.01	0.02	207
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.60	6.60	< 0.005	< 0.005	0.01	6.69
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.09	1.09	< 0.005	< 0.005	< 0.005	1.11
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Clearing and grubbing	Site Preparation	8/30/2025	9/13/2025	5.00	10.0	—
Excavation	Grading	9/14/2025	10/26/2025	5.00	30.0	—
Placing Fill, Compaction, and Levee Grading	Building Construction	10/27/2025	12/5/2025	5.00	30.0	—
Gravel Access Road Reconstruction	Paving	12/6/2025	1/16/2026	5.00	30.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Clearing and grubbing	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Clearing and grubbing	Excavators	Diesel	Average	1.00	8.00	84.0	0.37
Clearing and grubbing	Rubber Tired Loaders	Diesel	Average	1.00	8.00	150	0.36
Clearing and grubbing	Off-Highway Trucks	Diesel	Average	5.00	8.00	376	0.38
Excavation	Rubber Tired Dozers	Diesel	Average	1.00	8.00	148	0.41
Excavation	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Excavation	Rubber Tired Loaders	Diesel	Average	1.00	8.00	84.0	0.37
Excavation	Off-Highway Trucks	Diesel	Average	5.00	8.00	367	0.40
Placing Fill, Compaction, and Levee Grading	Rubber Tired Dozers	Diesel	Average	1.00	7.00	367	0.29
Placing Fill, Compaction, and Levee Grading	Excavators	Diesel	Average	1.00	8.00	82.0	0.20
Placing Fill, Compaction, and Levee Grading	Rubber Tired Loaders	Diesel	Average	1.00	8.00	14.0	0.74
Placing Fill, Compaction, and Levee Grading	Off-Highway Trucks	Diesel	Average	5.00	8.00	46.0	0.45
Gravel Access Road Reconstruction	Rubber Tired Dozers	Diesel	Average	1.00	8.00	81.0	0.42
Gravel Access Road Reconstruction	Excavators	Diesel	Average	1.00	8.00	89.0	0.36
Gravel Access Road Reconstruction	Rubber Tired Loaders	Diesel	Average	1.00	8.00	36.0	0.38
Gravel Access Road Reconstruction	Off-Highway Trucks	Diesel	Average	5.00	8.00	376	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Clearing and grubbing	—	—	—	—
Clearing and grubbing	Worker	20.0	14.9	LDA,LDT1,LDT2
Clearing and grubbing	Vendor	—	10.8	HHDT,MHDT
Clearing and grubbing	Hauling	37.5	20.0	HHDT
Clearing and grubbing	Onsite truck	—	—	HHDT
Excavation	—	—	—	—
Excavation	Worker	20.0	14.9	LDA,LDT1,LDT2
Excavation	Vendor	—	10.8	HHDT,MHDT
Excavation	Hauling	12.5	20.0	HHDT
Excavation	Onsite truck	—	—	HHDT
Placing Fill, Compaction, and Levee Grading	—	—	—	—
Placing Fill, Compaction, and Levee Grading	Worker	0.00	14.9	LDA,LDT1,LDT2
Placing Fill, Compaction, and Levee Grading	Vendor	0.00	10.8	HHDT,MHDT
Placing Fill, Compaction, and Levee Grading	Hauling	0.00	20.0	HHDT
Placing Fill, Compaction, and Levee Grading	Onsite truck	—	—	HHDT
Gravel Access Road Reconstruction	—	—	—	—
Gravel Access Road Reconstruction	Worker	20.0	14.9	LDA,LDT1,LDT2
Gravel Access Road Reconstruction	Vendor	—	10.8	HHDT,MHDT
Gravel Access Road Reconstruction	Hauling	0.00	20.0	HHDT
Gravel Access Road Reconstruction	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Clearing and grubbing	1,500	1,500	7.50	0.00	—
Excavation	1,500	1,500	8.00	0.00	—
Gravel Access Road Reconstruction	0.00	0.00	0.00	0.00	12.0

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Asphalt Surfaces	12.0	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O

2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.9	annual days of extreme heat
Extreme Precipitation	3.30	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth

Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	1	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	1	1	1	2

Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	37.6
AQ-PM	11.5
AQ-DPM	14.5
Drinking Water	67.0
Lead Risk Housing	53.4
Pesticides	90.8
Toxic Releases	17.9
Traffic	2.05
Effect Indicators	—
CleanUp Sites	50.3

Groundwater	74.8
Haz Waste Facilities/Generators	61.6
Impaired Water Bodies	83.0
Solid Waste	86.5
Sensitive Population	—
Asthma	45.4
Cardio-vascular	77.8
Low Birth Weights	18.0
Socioeconomic Factor Indicators	—
Education	88.0
Housing	20.3
Linguistic	74.8
Poverty	56.2
Unemployment	71.7

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	33.63274734
Employed	47.8121391
Median HI	42.91030412
Education	—
Bachelor's or higher	26.52380341
High school enrollment	23.85474143
Preschool enrollment	33.37610676
Transportation	—
Auto Access	84.51174131

Active commuting	11.16386501
Social	—
2-parent households	71.14076736
Voting	79.96920313
Neighborhood	—
Alcohol availability	51.36661106
Park access	22.40472219
Retail density	1.527011421
Supermarket access	40.57487489
Tree canopy	66.88053381
Housing	—
Homeownership	60.9393045
Housing habitability	69.10047479
Low-inc homeowner severe housing cost burden	33.28628256
Low-inc renter severe housing cost burden	85.87193635
Uncrowded housing	34.15886052
Health Outcomes	—
Insured adults	24.93263185
Arthritis	0.0
Asthma ER Admissions	65.7
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	42.1
Cognitively Disabled	54.2

Physically Disabled	21.0
Heart Attack ER Admissions	52.6
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.2
SLR Inundation Area	0.0
Children	14.8
Elderly	59.3
English Speaking	37.6
Foreign-born	58.0
Outdoor Workers	2.5
Climate Change Adaptive Capacity	—
Impervious Surface Cover	89.6
Traffic Density	1.5
Traffic Access	0.0
Other Indices	—
Hardship	70.6
Other Decision Support	—
2016 Voting	70.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	65.0
Healthy Places Index Score for Project Location (b)	44.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Lot acreage updated to match maximum amount of that acreage that would be disturbed per the PD.
Construction: Construction Phases	Construction phasing and timing updated to match PD.
Construction: Off-Road Equipment	Equipment list updated to match the PD.
Construction: Dust From Material Movement	Material imported and exported updated to match PD. Material imported/ exported distributed evenly over three phases.

APPENDIX B

Biological Resources Assessment for the RD 108 Slope Stability FSRP Sites Project

ECORP Consulting, Inc.

June 2024.

Biological Resources Assessment for the Reclamation District 108 Slope Stability Flood System Repair Program (FSRP) Sites Project

Colusa and Yolo Counties, California

Prepared For:

Reclamation District 108

Prepared By:

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS
2525 Warren Drive
Rocklin, California 95677

June 11, 2024

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LIST OF ACRONYMS AND ABBREVIATIONS

Term	Definition
Agencies	California Department of Fish and Wildlife and U.S. Fish and Wildlife Service
AMM	Avoidance and Minimization Measure
ARD	Aquatic Resources Delineation
BCC	USFWS Bird of Conservation Concern
BMP	Best Management Practice
BRA	Biological Resources Assessment
BSA	Biological Study Area
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CE	Categorical Exclusion
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFP	California Fully Protected
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
District	Reclamation District 108
DPS	Distinct Population Segment
ECORP	ECORP Consulting, Inc.
EFH	Essential Fish Habitat
ESA	Endangered Species Act
FC	Federal Candidate
FE	Federal Endangered
FPT	Federal Proposed Threatened
FSRP	Flood System Repair Program
FT	Federal Threatened
GGS	giant garter snake
GPS	Global Positioning System
HCP	Habitat Conservation Plan
LSAA	Lake and Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
MCV	Manual of California Vegetation
MLRA	Major Land Resource Area
MSL	Mean Sea Level
NCCP	Natural Community Conservation Plan
NCCPA	California Natural Community Conservation Planning Act
NCDC	National Climatic Data Center
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service

Term	Definition
NWPT	northwest pond turtle
OHWM	Ordinary High Water Mark
Project	Reclamation District 108 Slope Stability Flood System Repair Program (FSRP) Sites Project
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SR	State Route
SSC	California Species of Special Concern
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VELB	Valley Elderberry Longhorn Beetle
WBWG	Western Bat Working Group
WL	State Watch List

1.0 INTRODUCTION

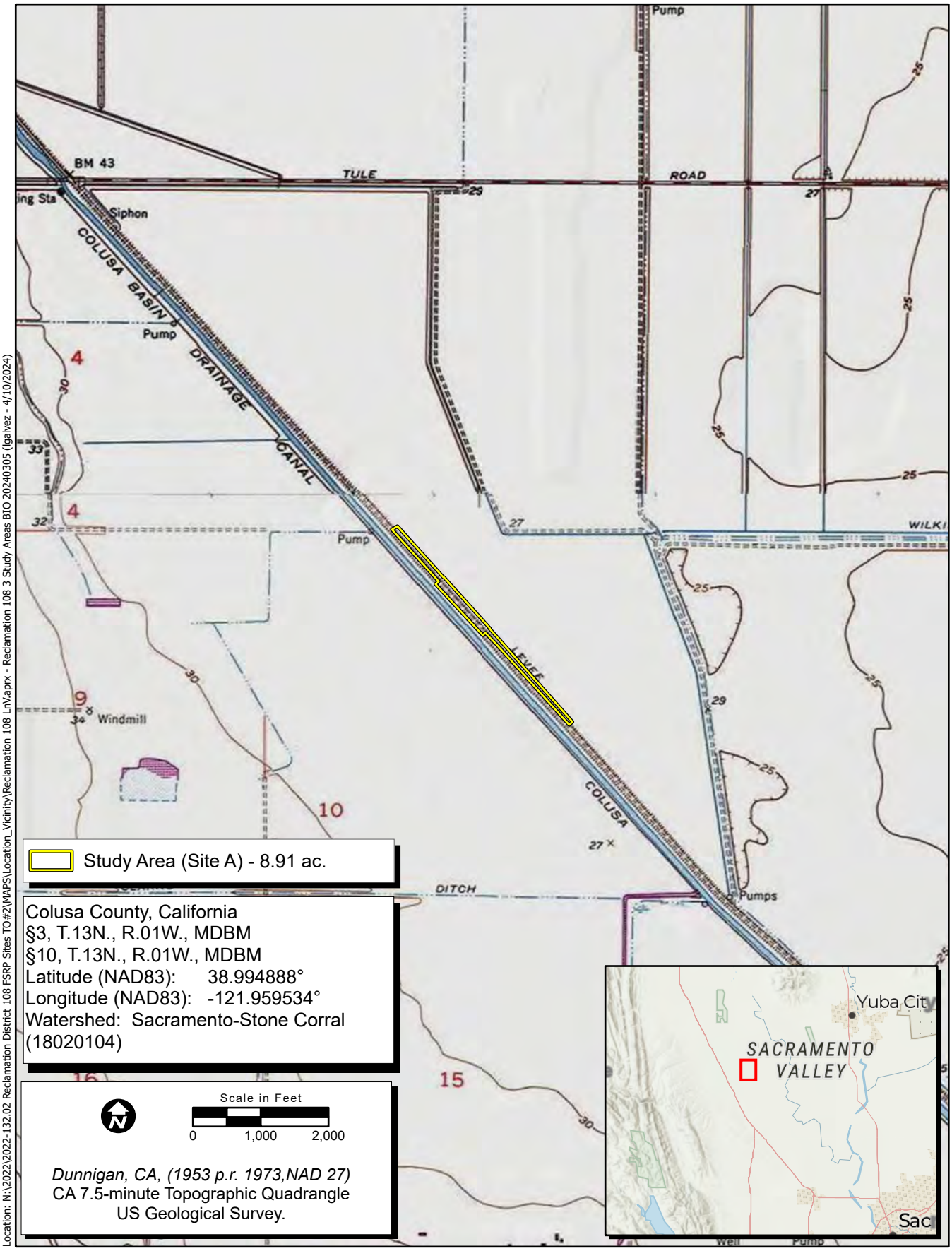
ECORP Consulting, Inc. (ECORP) conducted a Biological Resources Assessment (BRA) at the request of the Reclamation District 108 (the District) for the proposed Reclamation District 108 Slope Stability Flood System Repair Program (FSRP) Sites Project (Project) located in Colusa County, California. The results of this assessment will support environmental review of the Project in accordance with the California Environmental Quality Act (CEQA) and will provide the basis for identifying appropriate measures to lessen or avoid significant impacts to biological resources.

1.1 Project Location and Description

The Project proposes to conduct repairs along two segments of the Colusa Basin Drainage Canal East Levee: a 640-foot-long segment between Tule Road and White Road at Levee Mile 17.2 (Site A), and a 150-foot-long segment between Yolo County Line Road and White Road at Levee Mile 12.7 (Site B). The Project also proposes to use an optional *spoils area* for depositing excess excavated material (Spoils Area); this area is located in Yolo County between County Road 108 and State Route (SR) 45.

1.2 Biological Study Area

The Biological Study Area (BSA) includes all areas where Project-related activities may result in impacts to sensitive biological resources. The BSA is composed of three separate sites that cumulatively total approximately 16.34 acres (Figure 1-1). The northern portion of the BSA (Site A) is located in Colusa County between Tule Road and White Road, in the northern half of Section 10 of Township 13 North, Range 1 West. The southern portion of the BSA (Site B) is located in Colusa County between White Road and Yolo County Line Road, in the eastern half of the southwestern quarter of Section 30 of Township 13 North, Range 1 East. The spoils area of the BSA (Spoils Area) is located in Yolo County on the bank of an unnamed canal between County Road 108 and SR-45, in the southwestern quarter of Section 26 of Township 12 North, Range 1 East, Mount Diablo Base and Meridian, as depicted on the 1953 (photorevised 1973) U.S. Geological Survey (USGS) Dunnigan, California and 1952 (photorevised 1973) El Dorado Bend, California 7.5-minute topographic quadrangle maps. The approximate center of the BSA is located at 38.945843 degrees latitude and -121.906616 degrees longitude. The BSA is within the Sacramento-Stone Corral Watershed (Hydrologic Unit Code #18020104; USGS 2024).



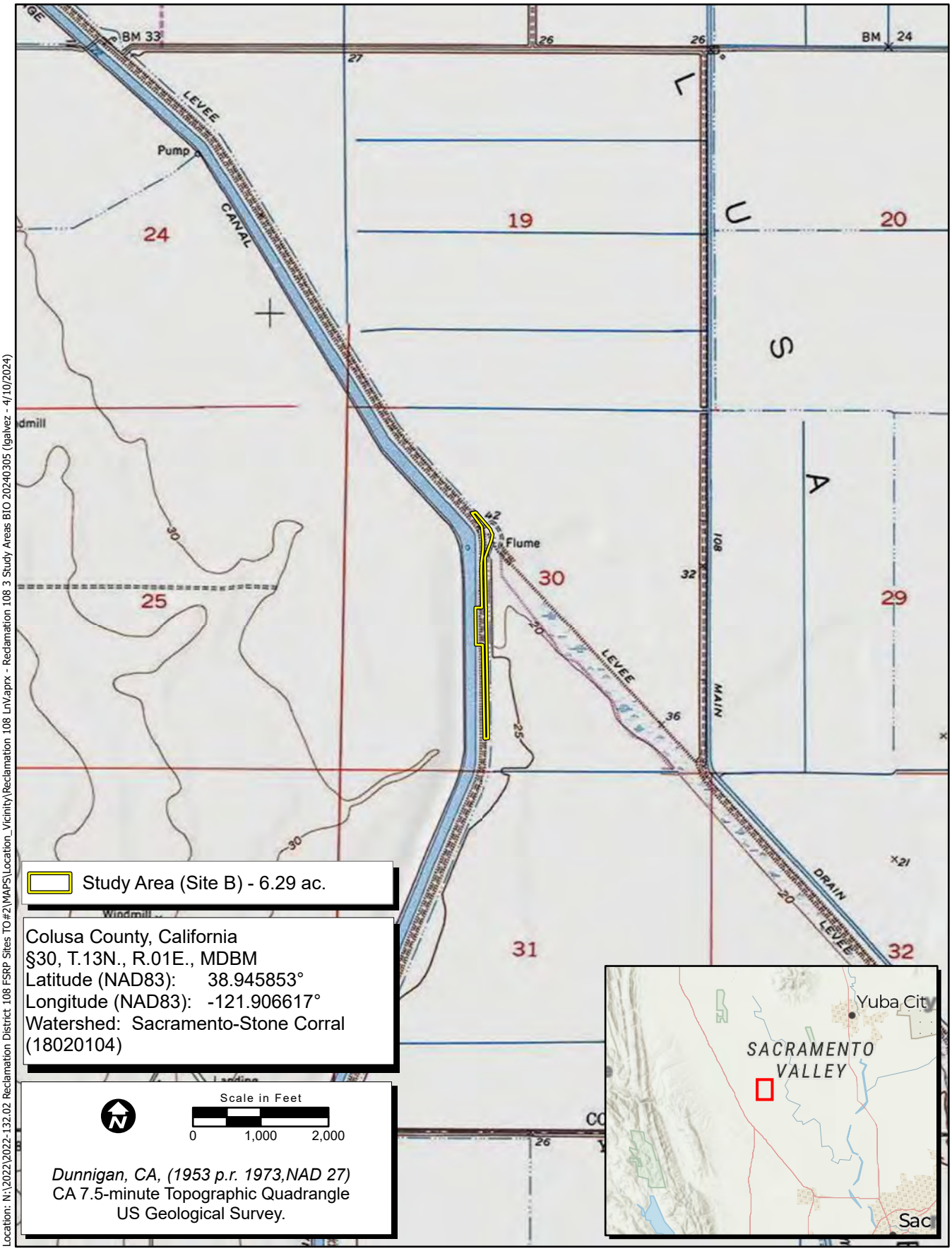
Location: N:\2022\2022-132.02 Reclamation District 108 FSRP Sites TO#2\MAPS\Location_Vicinity\Reclamation 108 LnV.aprx - Reclamation 108 3 Study Areas BIO 20240305 (lgalvez - 4/10/2024)

Map Date: 4/10/2024
Sources: ESRI, USGS

Figure 1. Study Area Location and Vicinity

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

2022-132.02 Reclamation District 108 T02



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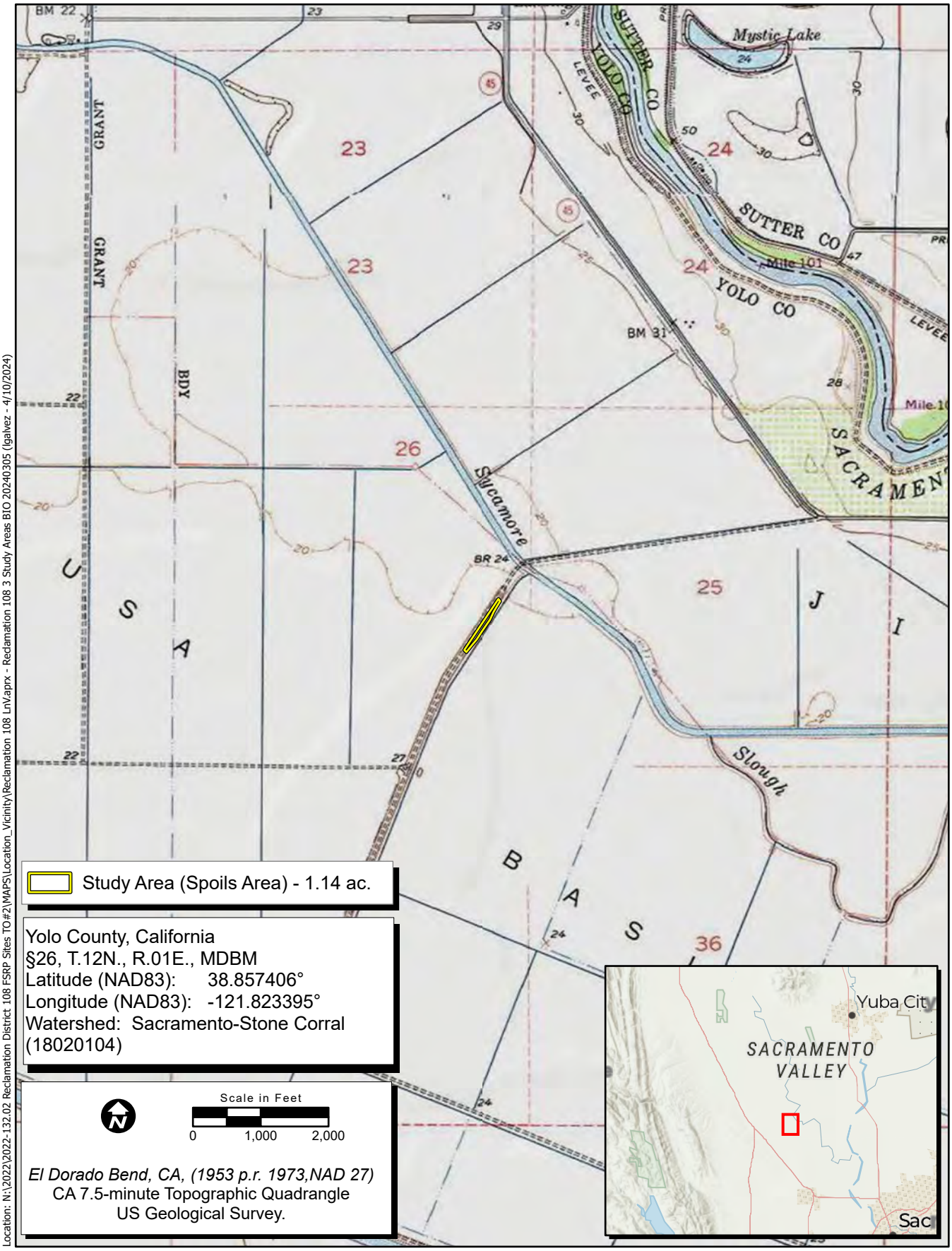
Map Date: 4/10/2024
Sources: ESRI, USGS

Figure 1. Study Area Location and Vicinity

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

2022-132.02 Reclamation District 108 T02



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Map Date: 4/10/2024
Sources: ESRI, USGS

Figure 1. Study Area Location and Vicinity

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

2022-132.02 Reclamation District 108 T02

1.3 Purpose of this Biological Resources Assessment

The purpose of this BRA is to assess the BSA for the potential for occurrence of special-status plant and animal species or their habitats, in addition to other sensitive or protected resources such as migratory birds, sensitive natural communities, riparian habitat, oak woodlands, and potential Waters of the U.S. or State, including wetlands. This assessment does not include determinate field surveys for special-status species conducted according to agency-promulgated protocols (with the exception of a valley elderberry longhorn beetle survey). The conclusions and recommendations presented in this report are based on a review of the literature referenced in this report and site reconnaissance.

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

- are listed, proposed for listing, or candidates for future listing as threatened or endangered under the federal Endangered Species Act (ESA);
- are listed or candidates for future listing as threatened or endangered under the California ESA;
- meet the definitions of endangered or rare under Section 15380 of the CEQA Guidelines;
- are identified as a Species of Special Concern by the California Department of Fish and Wildlife (CDFW);
- are birds identified as Birds of Conservation Concern (BCC) by the U.S. Fish and Wildlife Service (USFWS);
- are plants considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" or "rare, threatened, or endangered in California but more common elsewhere" (California Rare Plant Ranks [CRPR] 1 and 2);
- are plants listed as rare under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.); or
- are fully protected in California in accordance with the California Fish and Game Code, Sections 3511 (birds), 4700 (mammals), 5050 (amphibians and reptiles), and 5515 (fishes).

2.0 REGULATORY SETTING

2.1 Federal Regulations

2.1.1 Federal Endangered Species Act

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

2.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the United States and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. The protections of the MBTA extend to disturbances that result in abandonment of a nest with eggs or young. The USFWS may issue permits to qualified applicants as authorized by the MBTA for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits.

2.1.3 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act of 1940 (as amended) provides for the protection of bald eagle and golden eagle by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit [16 USC 668(a); 50 CFR 22]. The USFWS may authorize take of bald eagles and golden eagles for activities where the take is associated with, but not the purpose of, the activity and cannot practicably be avoided (50 CFR 22.26).

2.1.4 Magnuson-Stevens Act

Essential Fish Habitat (EFH) was defined by the U.S. Congress in the 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act, or Magnuson-Stevens Act, as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity." Implementing regulations clarified that waters include all aquatic areas and their physical, chemical, and biological properties; substrate includes the associated biological communities that make these areas suitable for fish habitats, and the description and identification of EFH should include habitats used at any time during the species' life cycle. EFH includes all types of aquatic habitat, such as wetlands, coral reefs, sand, seagrasses, and rivers.

2.1.5 Federal Clean Water Act

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

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

The U.S. Environmental Protection Agency also has authority over wetlands and may override a USACE permit.

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

2.2 State Regulations

2.2.1 California Fish and Game Code

2.2.1.1 California Endangered Species Act

The California ESA (California Fish and Game Code Sections 2050-2116) generally parallels the main provisions of the federal ESA, but unlike its federal counterpart, the California ESA applies the take prohibitions to species proposed for listing (called *candidates* by the state). Section 2080 of the California Fish and Game Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. *Take* is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Section 2081 allows CDFW to authorize incidental take

permits if species-specific minimization and avoidance measures are incorporated to fully mitigate the impacts of the Project.

2.2.1.2 Fully Protected Species

The State of California first began to designate species as *fully protected* prior to the creation of the federal and California ESAs. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the state and/or federal ESAs. Previously, the regulations that implement the Fully Protected Species Statute (California Fish and Game Code Sections 4700 for mammals, 3511 for birds, 5050 for reptiles and amphibians, and 5515 for fish) provided that fully protected species may not be taken or possessed at any time. However, on July 10, 2023, Senate Bill 147 was signed into law, authorizing CDFW to issue take permits under the California ESA for fully protected species for qualifying projects through 2033. Qualifying projects include:

- a maintenance, repair, or improvement project to the State Water Project, including existing infrastructure, undertaken by the Department of Water Resources;
- a maintenance, repair, or improvement project to critical regional or local water agency infrastructure;
- a transportation project, including any associated habitat connectivity and wildlife crossing project, undertaken by a state, regional, or local agency, that does not increase highway or street capacity for automobile or truck travel;
- a wind project and any appurtenant infrastructure improvement, and any associated electric transmission project carrying electric power from a facility that is located in the State to a point of junction with any California based balancing authority; or
- a solar photovoltaic project and any appurtenant infrastructure improvement, and any associated electric transmission project carrying electric power from a facility that is located in the State to a point of junction with any California-based balancing authority.

CDFW may also issue licenses or permits for take of these species for necessary scientific research or live capture and relocation, and may allow incidental take for lawful activities carried out under an approved Natural Community Conservation Plan within which such species are covered.

2.2.1.3 Native Plant Protection Act

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

2.2.1.4 California Fish and Game Code Special Protections for Birds

Sections 3503, 3513, and 3800 of the California Fish and Game Code specifically protect birds. Section 3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird. Subsection 3503.5 prohibits the take, possession, or destruction of any birds in the orders Strigiformes (owls) or Falconiformes (hawks and eagles), as well as their nests and eggs. Section 3513 prohibits the take or possession of any migratory nongame bird as designated in the MBTA. Section 3800 states that, with limited exceptions, it is unlawful to take any nongame bird, defined as all birds occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds. These provisions, along with the federal MBTA, serve to protect all nongame birds and their nests and eggs, except as otherwise provided in the code.

2.2.1.5 Lake or Streambed Alteration Agreements

Section 1602 of the California Fish and Game Code requires that a Notification of Lake or Streambed Alteration be submitted to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." The notification must incorporate proposed measures to protect affected fish and wildlife resources. CDFW may suggest additional protective measures during their review. A Lake or Streambed Alteration Agreement (LSAA) is the final proposal mutually agreed upon by CDFW and the applicant. Projects that require an LSAA often also require a permit from the USACE under Section 404 of the CWA. The conditions of the Section 404 permit and the LSAA frequently overlap in these instances.

2.2.2 Porter-Cologne Water Quality Act

The RWQCB implements water quality regulations under the federal CWA and the Porter-Cologne Water Quality Act. These regulations require compliance with the National Pollutant Discharge Elimination System (NPDES), including compliance with the California Storm Water NPDES General Construction Permit for discharges of storm water runoff associated with construction activities. General Construction Permits for projects that disturb 1 or more acres of land require development and implementation of a Storm Water Pollution Prevention Plan. Under the Porter-Cologne Water Quality Act, the RWQCB also regulates actions that would involve "discharging waste, or proposing to discharge waste, within any region that could affect the water of the state" (Water Code 13260(a)). Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code 13050 (e)). The RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into Waters of the State, that are not regulated by the USACE due to a lack of connectivity with a navigable water body. The RWQCB may require issuance of Waste Discharge Requirements for these activities.

2.2.3 California Environmental Quality Act

Per CEQA Guidelines Section 15380, a species not protected on a federal or state list may be considered rare or endangered if the species meets certain specified criteria. These criteria follow the definitions in the federal and California ESAs, and Sections 1900-1913 of the California Fish and Game Code, which deal

with rare or endangered plants or animals. Section 15380 was included in the CEQA Guidelines primarily to deal with situations where a project under review may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW.

2.2.3.1 CEQA Significance Criteria

Sections 15063-15065 of the CEQA Guidelines address how an impact is identified as significant. Generally, impacts to listed (i.e., rare, threatened, or endangered) species are considered significant. Assessment of *impact significance* to populations of non-listed species (e.g., Species of Special Concern) usually considers the proportion of the species' range that will be affected by a project, impacts to habitat, and the regional and population level effects.

Section 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines. Pursuant to Appendix G, impacts to biological resources would normally be considered significant if the Project would:

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS;
- have a substantial adverse effect on federally protected Waters of the U.S. including wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- conflict with the provisions of an adopted HCP, Natural Community Conservation Plan (NCCP), or other approved local, regional or state habitat conservation plan.

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

2.2.3.2 Species of Special Concern

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

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

SSC are typically associated with threatened habitats. Projects that result in substantial impacts to SSC may be considered significant under CEQA.

2.2.3.3 USFWS Bird of Conservation Concern

The 1988 amendment to the Fish and Wildlife Conservation Act mandates the USFWS "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under ESA." To meet this requirement, the USFWS published a list of BCC (USFWS 2021) for the U.S. The list identifies the migratory and nonmigratory bird species (beyond those already designated as federally threatened or endangered) that represent USFWS' highest conservation priorities. Depending on the policy of the lead agency, projects that result in substantial impacts to BCC may be considered significant under CEQA.

2.2.3.4 Watch List Species

The CDFW maintains a list consisting of taxa that were previously designated as "Species of Special Concern" but no longer merit that status, or which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status.

Depending on the policy of the lead agency, projects that result in substantial impacts to species on the Watch List (WL) may be considered significant under CEQA.

2.2.3.5 California Rare Plant Ranks

The CNPS maintains the *Rare Plant Inventory* (CNPS 2024a), which provides a list of plant species native to California that are threatened with extinction, have limited distributions, or low populations. Plant species

meeting one of these criteria are assigned to one of six CRPRs. The rank system was developed in collaboration with government, academic, non-governmental organizations, and private sector botanists, and is jointly managed by CDFW and the CNPS. The CRPRs are currently recognized in the California Natural Diversity Database (CNDDB). The following are definitions of the CNPS CRPRs:

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

Additionally, the CNPS has defined Threat Ranks that are added to the CRPR as an extension. Threat Ranks designate the level of threat on a scale of 0.1 through 0.3, with 0.1 being the most threatened and 0.3 being the least threatened. Threat Ranks are generally present for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California), and some species ranked 3, which lack threat information, do not typically have a Threat Rank extension. The following are definitions of the CNPS Threat Ranks:

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

Factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Rank; and differences in Threat Ranks do not constitute additional or different protection (CNPS 2024b). Depending on the policy of the lead agency, substantial impacts to plants ranked 1A, 1B, 2A, or 2B are typically considered significant under CEQA Guidelines Section 15380. Significance under CEQA is typically evaluated on a case-by-case basis for plants ranked 3 or 4.

2.2.3.6 Sensitive Natural Communities

Sensitive natural communities are vegetation communities that are imperiled or vulnerable to environmental effects of projects. CDFW maintains the California Natural Community List (CDFW 2022), which provides a list of vegetation alliances, associations, and special stands as defined in *A Manual of California Vegetation Online* (MCV; CNPS 2024b), along with their respective state and global rarity ranks, if applicable. Natural communities with a state rarity rank of S1, S2, or S3 are considered sensitive natural communities. Depending on the policy of the lead agency, impacts to sensitive natural communities may be considered significant under CEQA.

2.2.3.7 Wildlife Movement Corridors and Nursery Sites

Impacts to wildlife movement corridors or nursery sites may be considered significant under CEQA. As part of the California Essential Habitat Connectivity Project, CDFW and California Department of Transportation maintain data on Essential Habitat Connectivity areas. This data is available in the CNDDB. The goal of this project is to map large intact habitat or natural landscapes and potential linkages that could provide corridors for wildlife. In urban settings, riparian vegetated stream corridors can also serve as wildlife movement corridors. Nursery sites include but are not limited to concentrations of nest or den sites such as heron rookeries, bat maternity roosts, and mule deer critical fawning areas. These data are available through CDFW's Biogeographic Information and Observation System database or as occurrence records in the CNDDB and are supplemented with the results of the field reconnaissance.

3.0 METHODS

3.1 Literature Review

ECORP biologists performed a review of existing available information for the BSA. Literature sources included current and historical aerial imagery, any previous biological studies conducted for the area, topographic mapping, soil survey mapping available from the Natural Resources Conservation Service (NRCS) *Web Soil Survey*, USFWS National Wetlands Inventory mapping, USFWS Critical Habitat Mapper, NMFS Essential Fish Habitat Mapper, and other relevant literature as cited throughout this document. ECORP reviewed the following resources to identify special-status plant and wildlife species that have been documented within or near the BSA:

- CDFW's CNDDB data for the *Dunnigan, California* and *El Dorado Bend, California* 7.5-minute quadrangles and the surrounding 12 quadrangles (CDFW 2024)
- CNPS Rare Plant Inventory data for the *Dunnigan, California* and *El Dorado Bend, California* 7.5-minute quadrangles and the surrounding 12 quadrangles (CNPS 2024)
- USFWS Information for Planning and Consultation Resource Report List for the BSA (USFWS 2024)
- National Oceanic and Atmospheric Administration (NOAA) Fisheries West Coast Region Protected Resources App (NOAA 2024a)

The results of the database queries are provided in Appendix A. ECORP evaluated the special-status species that were identified in the literature review for their potential to occur within the BSA based on available information concerning species habitat requirements and distribution, occurrence data, and the findings of the site reconnaissance.

3.2 Site Reconnaissance

ECORP Senior Biologist Daniel Wong conducted the site reconnaissance visit on February 22 and 29, 2024. The biologist visually assessed the BSA while walking meandering transects through all portions of the site, using binoculars to scan inaccessible areas. The biologist collected the following biological resource information:

- characteristics and approximate boundaries of vegetation communities and other land cover types
- plant and animal species or their sign directly observed
- elderberry (*Sambucus* sp.) shrub locations and characteristics
- characteristics and approximate extents of aquatic resources observed
- incidental observations of special habitat features such as burrows, active raptor nests, or potential bat roost sites

The biologists qualitatively assessed and mapped vegetation communities based on dominant plant composition. Vegetation community classification was based on the classification systems presented in the MCV, paying special attention to identifying those portions of the BSA with the potential to support special-status species or sensitive habitats. Data were recorded on a Global Positioning System (GPS) unit, field notebooks, and/or maps. The biologist took photographs during the survey to provide visual representation of the conditions within the BSA.

3.3 Other Surveys

3.3.1 Valley Elderberry Longhorn Beetle Survey

Concurrent with the site reconnaissance, ECORP conducted a determinate-level survey for VELB throughout the BSA. ECORP conducted the survey in accordance with the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 2017). The biologist surveyed inaccessible private properties within the 165-foot VELB survey buffer from within the Project Area. ECORP did not observe elderberry shrubs (*Sambucus nigra*) within or immediately adjacent to the BSA during this survey.

3.3.2 Aquatic Resources Delineation

ECORP conducted an Aquatic Resources Delineation (ARD) in conjunction with the site reconnaissance survey and in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008a). ECORP identified nonwetland waters in the field according to *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b). ECORP recorded aquatic resources within the BSA using a postprocessing-capable GPS unit with submeter accuracy (e.g., Samsung Galaxy Tablet, FieldMaps for ArcGIS application with Juniper System Geode GPS unit with real-time correction).

4.0 RESULTS

4.1 Site Characteristics and Land Use

The BSA is composed of relatively flat terrain located in the Sacramento Valley Subregion of the Great Central Valley floristic region of California (Baldwin et al. 2012). Elevations within the BSA range from approximately 15 to 50 feet above Mean Sea Level (MSL). The average winter low temperature in the vicinity of the BSA is 38.5 degrees Fahrenheit, and the average summer high temperature is 91.7 degrees Fahrenheit. Average annual precipitation is approximately 14.4 inches, which falls as rain (National Oceanic and Atmospheric Administration [NOAA] 2024b).

The BSA includes two sections along a levee adjacent to the Colusa Basin Drainage Canal (Site A and Site B), and a section following a service road between flooded-irrigated fields and a drainage canal (the Site B Spoils Area). The District maintains the BSA annually for vegetation management and fire risk abatement. Surrounding land uses are primarily rice cultivation and other forms of intensive agriculture.

The majority of the BSA is composed of *Avena* spp. – *Bromus* spp. Herbaceous Semi-Natural Alliance, which is a vegetation community consisting of annual, non-native grass species that are prevalent throughout the region. Dominant species observed within this community include wild oats (*Avena* sp.), brome grass (*Bromus* sp.), and barley (*Hordeum* sp.).

Representative photographs of the BSA are provided in Appendix B.

4.2 Soils and Geology

Table 1 provides an overview of the soil series mapped within the BSA and key features of the soil series, such as hydric rating or presence of serpentine or gabbroic soil material.

Table 1. Soil Units Within the BSA

Soil Unit and Symbol[1]	Hydric Components[2]	Hydric Component Landform[2]
115 - Clear Lake clay, 0 to 1 percent slopes, occasionally flooded, MLRA 17 (115)	Clear Lake	Basin Floors
Sc - Sacramento clay, 0 to 2 percent slopes, MLRA 17 (Sc)	Sacramento, Willows, Clear Lake, Omni	Basin Floors
	Sycamore	Alluvial Fans
	Merritt	Floodplain Steps

[1]Source: Natural Resources Conservation Service (NRCS) 2024a
[2]Source: NRCS 2024b

According to the Web Soil Survey (NRCS 2024a), two soil mapping units are within the BSA (Figure 4-1):

- 115 - Clear Lake clay, 0 to 1 percent slopes, occasionally flooded, MLRA 17 (115)
- Sc - Sacramento clay, 0 to 2 percent slopes, MLRA 17 (Sc)

Map Contents

Study Area - 16.34 ac.

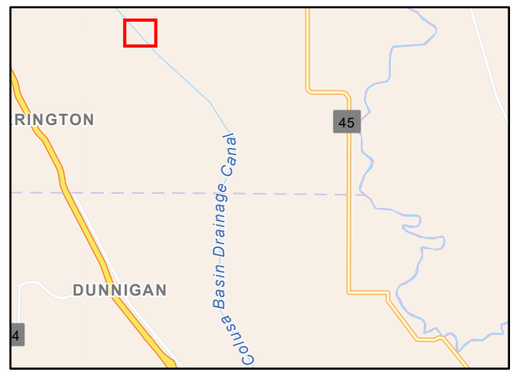
Series Number - Series Name

115-Clear Lake clay, 0 to 1 percent slopes, occasionally flooded, MLRA 17

652-Water

Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database for COLUSA, CA and El DORADO, CA

Sources: (Maxar, Esri World Imagery)



Location: N:\2022\2022-132.02 Reclamation District 108 FSRP Sites TO#2\MAPS\Soils_and_Geology\Reclamation 108 Soils aprx - Reclamation District 108 Soils (lgalvez - 4/10/2024)

Map Date: 4/10/2024

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Scale in Feet
0 500

Figure 4-1. Natural Resources Conservation Service Soils Types
2022-132.02 Reclamation District 108

Map Contents

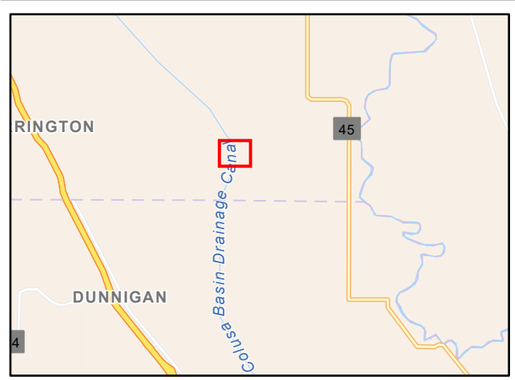
Study Area - 16.34 ac.

Series Number - Series Name

115-Clear Lake clay, 0 to 1 percent slopes, occasionally flooded, MLRA 17

Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database for COLUSA, CA and El DORADO, CA

Sources: (Maxar, Esri World Imagery)



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Map Date: 4/10/2024

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Scale in Feet
0 500

Figure 4-1. Natural Resources Conservation Service Soils Types
2022-132.02 Reclamation District 108

Map Contents

Study Area - 16.34 ac.

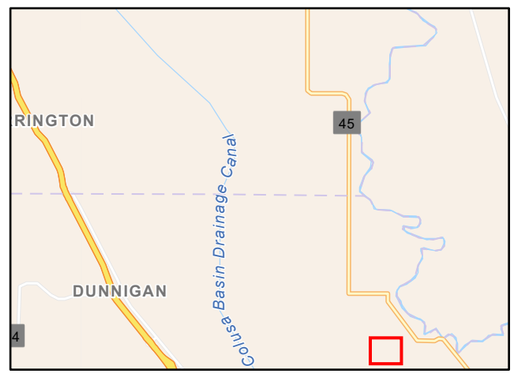
Series Number - Series Name

Sc-Sacramento clay, 0 to 2 percent slopes, MLRA 17

W-Water

Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database for COLUSA, CA and El DORADO, CA

Sources: (Maxar, Esri World Imagery)



Location: N:\2022\2022-132.02 Reclamation District 108 FSRP Sites TO#2\MAPS\Soils_and_Geology\Reclamation 108 Soils.aprx - Reclamation District 108 Soils (lgalvez - 4/10/2024)

Map Date: 4/10/2024

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Scale in Feet
0 500

Figure 4-1. Natural Resources Conservation Service Soils Types
2022-132.02 Reclamation District 108

The Clear Lake soil series consists of very deep and poorly drained soils, which are composed of a mix of alluvium from igneous, metamorphic, and sedimentary parent material (NRCS 2024a). Clear Lake clay, 0 to 1 percent slopes, occasionally flooded MLRA 17 (115) is primarily composed of the hydric Clear Lake soil series but may contain non-hydric minor components (NRCS 2024b).

The Sacramento soil series consists of very deep and poorly drained soils, which is composed of a mix of alluvium from igneous, metamorphic, and sedimentary parent material (NRCS 2024a). Both major and minor components of Sacramento clay, 0 to 2 percent slopes, MLRA 17 (Sc) are considered hydric soils (NRCS 2024b).

4.3 Vegetation Communities and Land Cover Types

The following sections describe vegetation communities and land cover types within the BSA, as observed during the site reconnaissance. A full list of plants observed onsite can be found in Appendix C. The approximate extent of vegetation communities and land cover types are depicted on Figure 4-2.

4.3.1 Avena spp. – Bromus spp. Herbaceous Semi-Natural Alliance

The majority of the BSA is composed of *Avena* spp. – *Bromus* spp. Herbaceous Semi-Natural Alliance, which is a vegetation community consisting of annual, non-native grass species that are prevalent throughout the region. Semi-natural alliances are strongly dominated by nonnative plants that have become naturalized in the State, do not have state rarity rankings, and are not considered sensitive natural communities (CNPS 2024b). Dominant species observed within this community include wild oats (*Avena* sp.), brome grass (*Bromus* sp.), and barley (*Hordeum* sp.). ECORP observed this community on the slopes of the levees within Site A, Site B, and along the shoulders of the access road within the Site B Spoils Area.

4.3.2 Salix gooddingii - Salix laevigata Forest & Woodland Alliance

The western margins of Site A and Site B consist of a riparian canopy dominated by willows (*Salix* sp.) and resembles the S*alix gooddingii - Salix laevigata* Forest & Woodland Alliance, as characterized by the MCV (CNPS 2024b). The canopy of this vegetation community was outside of the BSA, and ECORP was unable to identify the understory composition of this community because it was underwater during the survey.

Map Contents

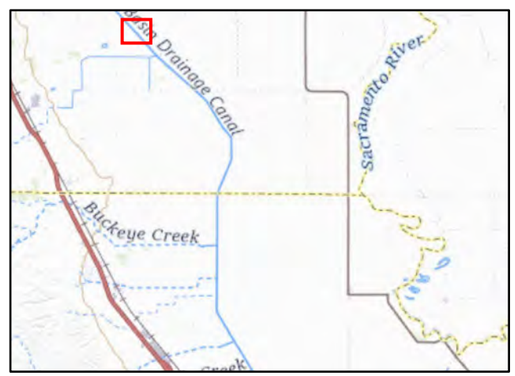
Study Area - 6.66 ac.

Vegetation Communities and Land Cover Types

Avena spp. – Bromus spp. Herbaceous Semi-Natural Alliance

Salix gooddingii - Salix laevigata Forest & Woodland Alliance

Sources: Maxar, Esri World Imagery, USGS



Location: N:\2022\2022-132.02 Reclamation District 108 FSRP Sites TO#2\MAPS\Vegetation_and_LandCover\Reclamation 108 Vegetation.aprx - Reclamation 108 Vegetation (lgalvez - 4/10/2024)

Map Date: 4/10/2024

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Scale in Feet
0 450

Figure 4.2 Vegetation Communities and Land Cover Types

2022-132.02 Reclamation District 108

Map Contents

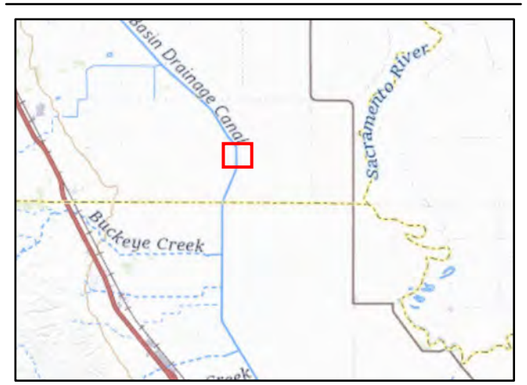
Study Area - 6.66 ac.

Vegetation Communities and Land Cover Types

Avena spp. – Bromus spp. Herbaceous Semi-Natural Alliance

Salix gooddingii - Salix laevigata Forest & Woodland Alliance

Sources: Maxar, Esri World Imagery, USGS



Location: N:\2022\2022-132.02 Reclamation District 108 FSRP Sites TO#2\MAPS\Vegetation_and_LandCover\Reclamation 108 Vegetation.aprx - Reclamation 108 Vegetation (lgalvez - 4/10/2024)

Map Date: 4/10/2024

ECORP Consulting, Inc.
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Scale in Feet
0 450

Figure 4.2 Vegetation Communities and Land Cover Types

2022-132.02 Reclamation District 108

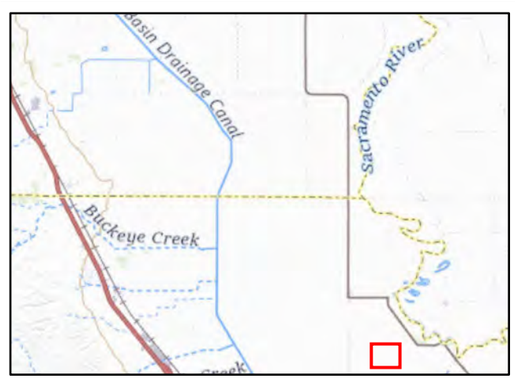
Map Contents

Study Area - 6.66 ac.

Vegetation Communities and Land Cover Types

Avena spp. – Bromus spp. Herbaceous Semi-Natural Alliance

Sources: Maxar, Esri World Imagery, USGS



Location: N:\2022\2022-132.02 Reclamation District 108 FSRP Sites TO#2\MAPS\Vegetation_and_LandCover\Reclamation 108 Vegetation.aprx - Reclamation 108 Vegetation (lgalvez - 4/10/2024)

Map Date: 4/10/2024

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Scale in Feet
0 450

Figure 4.2 Vegetation Communities and Land Cover Types

2022-132.02 Reclamation District 108

4.4 Aquatic Resources

ECORP mapped a total of 0.85 acre of aquatic resources within the BSA (Table 2). A discussion of the aquatic resources is presented below, and the aquatic resources delineation map is presented in Figure 4-3.

Table 2. Aquatic Resources Within the BSA

Aquatic Resources Type	Area (acres)[1]
Other Waters	
Creek	0.67
Ditch	0.18
Total	**0.85**

[1]Acreages represent a calculated estimation and are subject to modification following the USACE verification process.

4.4.1 Ditch

Ditches are linear features that are constructed to convey storm water and/or irrigation water. ECORP mapped three ditches within the BSA. These ditches were primarily unvegetated, with the exception of Ditch-3 in the southern portion of the BSA, which contained sparsely distributed cattails (*Typha* sp.). ECORP delineated the OHWM of Ditch-1 in Site A and Ditch-2 in Site B in the field by the presence of breaks in the bank slopes and changes in vegetation cover. ECORP delineated the OHWM of Ditch-3 at the Site B Spoils Area in the field by the change in vegetation species, change in vegetation cover, and a break in bank slope.

4.4.2 Creek (Colusa Basin Drainage Canal)

Creeks are linear features that exhibit a bed and bank, OHWM, and flow continuously throughout the year. ECORP mapped the Colusa Basin Drainage Canal within Site A and Site B (C-1 and C-2, respectively). Vegetation was completely submerged, with the exception of Fremont's cottonwood in the active floodplain. OHWM field indicators observed included breaks in the bank slopes, drift debris, and changes in vegetation species.

Map Contents

- Study Area - 16.34 ac.
- Reference Point

Sample Points

- Upland Point

Aquatic Resources

Other Waters (0.85 acre)

- Creek (0.67 acre)
- Ditch (0.18 acre)

Photo Source: Maxar (2022)
Boundary Source: Reclamation District 108
Delineator(s): Daniel Wong
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet

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

* The acreage value for each feature has been rounded to the nearest 1/1000 decimal. Summation of these values may not equal the total potential Waters of the U.S. acreage reported.

Location: N:\2022\2022-132.02 Reclamation District 108 FSRP Sites TO#2\MAPS\Hydro\Reclamation Aquatic.aprx - Reclamation 108 ARD (lgalvez - 4/11/2024)

Map Date: 4/11/2024

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Scale in Feet
0 120

Figure 4-3. Aquatic Resources Delineation

2022-132.02 Reclamation District 108

Map Contents

Study Area - 16.34 ac.

Reference Point

Sample Points

Upland Point

OHWM Transect

Aquatic Resources

Other Waters (0.85 acre)

Creek (0.67 acre)

Ditch (0.18 acre)

Photo Source: Maxar (2022)
Boundary Source: Reclamation District 108
Delineator(s): Daniel Wong
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet

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

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Location: N:\2022\2022-132.02 Reclamation District 108 FSRP Sites TO#2\MAPS\Hydro\Reclamation Aquatic.aprx - Reclamation 108 ARD (lgalvez - 4/11/2024)

Map Date: 4/11/2024

ECORP Consulting, Inc.
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Scale in Feet
0 120

Figure 4-3. Aquatic Resources Delineation

2022-132.02 Reclamation District 108

Map Contents

Study Area - 16.34 ac.

Reference Point

Sample Points

OHWM Transect

Aquatic Resources

Other Waters (0.85 acre)

Ditch (0.18 acre)

Photo Source: Maxar (2022)
Boundary Source: Reclamation District 108
Delineator(s): Daniel Wong
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet

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

* The acreage value for each feature has been rounded to the nearest 1/1000 decimal. Summation of these values may not equal the total potential Waters of the U.S. acreage reported.

Location: N:\2022\2022-132.02 Reclamation District 108 FSRP Sites TO#2\MAPS\Hydro\Reclamation Aquatic.aprx - Reclamation 108 ARD (lgalvez - 4/11/2024)

Map Date: 4/11/2024

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 120

Figure 4-3. Aquatic Resources Delineation

2022-132.02 Reclamation District 108

4.5 Wildlife

The BSA provides habitat for a variety of wildlife species. A full list of wildlife species observed in the BSA is provided in Appendix D.

4.6 Special-Status Species

Table 3 presents the full list of special-status plant and animal species identified through the literature review. For each species, the table provides the listing status, a brief description of habitat requirements and/or species ecology, a determination of the potential to occur within the BSA, and the rationale for that determination. The potential for each species to occur onsite was assessed using the following criteria:

- **Present** – Species was observed during the site visit or is known to occur within the BSA based on recent documented occurrences within the CNDDB or other literature.
- **Potential to Occur** – Suitable habitat (including soils and elevation requirements) occurs in the BSA, and the species is known or expected to occur in the Project vicinity based on available data sources or professional knowledge/experience.
- **Low Potential to Occur** – Marginal or limited amounts of habitat occur, or the species is not known to occur in the vicinity of the Project based on CNDDB records and other available information.
- **Absent** – No suitable habitat (including soils and elevation requirements) or the species is not known to occur within the vicinity of the Project based on CNDDB records and other documentation.

Plants					
Depauperate milk-vetch (*Astragalus pauperculus*)	–	–	4.3	Occurs within vernally mesic and volcanic soils in chaparral, cismontane woodland, and valley and foothill grasslands. Elevation: 195–3,985 feet Bloom Period: March–June	Absent. There is no suitable habitat within the BSA.

Table 3. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential To Occur within the Project Area
	ESA	CESA/ NPPA	Other		
Ferris' milk-vetch *(Astragalus tener* var. *ferrisiae)*	–	–	1B.1	Vernally mesic meadows and seeps and in sub–alkaline flats within valley and foothill grasslands. Elevation: 5–245 feet Bloom Period: April–May	Absent. There is no suitable habitat within the BSA.
Alkali milk-vetch *(Astragalus tener* var. *tener)*	–	–	1B.2	Alkaline playas and vernal pools, and alkaline adobe clay soils in valley and foothill grasslands. Elevation: 5–195 feet Bloom Period: March–June	Absent. There is no suitable habitat within the BSA.
Brittlescale *(Atriplex depressa)*	–	–	1B.2	Alkaline and clay soils within chenopod scrub, meadows and seeps, playas, valley and foothill grasslands, and vernal pools. Elevation: 5–1,050 feet Bloom Period: April–October	Absent. There is no suitable habitat within the BSA.
Vernal pool smallscale *(Atriplex persistens)*	–	–	1B.2	Alkaline vernal pools. Elevation: 35–375 feet Bloom Period: June–October	Absent. There is no suitable habitat within the BSA.
Parry's rough tarplant *(Centromadia parryi* ssp. *rudis)*	–	–	4.2	Alkaline, vernally mesic areas, and seeps in valley and foothill grassland and vernal pools, sometimes found on roadsides. Elevation: 0–330 feet Bloom Period: May–October	Low Potential to Occur. The levee roads and the annual grassland in the BSA provide marginally suitable habitat.
Palmate-bracted bird's-beak *(Chloropyron palmatum)*	FE	CE	1B.1	Alkaline areas in chenopod scrub and valley and foothill grassland. Elevation: 15–510 feet Bloom Period: May–October	Absent. There is no suitable habitat within the BSA.

Table 3. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential To Occur within the Project Area
	ESA	CESA/ NPPA	Other		
San Joaquin spearscale (Extriplex joaquinana)	–	–	1B.2	Occurs in alkaline areas within chenopod scrub, meadows and seeps, playas, and valley and foothill grassland. Elevation: 5–2,740 feet Bloom Period: April–October	Absent. There is no suitable habitat within the BSA.
Stinkbells *(Fritillaria agrestis)*	–	–	4.2	Clay and sometimes serpentine soils in chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland. Elevation: 35–5,100 feet Bloom Period: March–June	Absent. There is no suitable habitat within the BSA.
Woolly rose-mallow *(Hibiscus lasiocarpos* var. *occidentalis)*	–	–	1B.2	Marshes and freshwater swamps. Often in riprap on sides of levees. Elevation: 0–395 feet Bloom Period: June–September	Potential to Occur. The levee along Colusa Basin Drainage Canal and the drainage ditches provides suitable habitat.
Ferris' goldfields *(Lasthenia ferrisiae)*	–	–	4.2	Alkaline and clay vernal pools. Elevation: 65–2,295 feet Bloom Period: February–May	Absent. There is no suitable habitat within the BSA.
Coulter's goldfields *(Lasthenia glabrata* ssp. *coulteri*)	–	–	1B.1	Coastal marshes and swamps, playas, and vernal pools. Elevation: 5–4,005 feet Bloom Period: February–June	Absent. There is no suitable habitat within the BSA.
Colusa layia *(Layia septentrionalis)*	–	–	1B.2	Sandy or serpentine soils in chaparral, cismontane woodland, and valley and foothill grasslands. Elevation: 330–3,595 feet Bloom Period: April–May	Absent. There is no suitable habitat within the BSA.

Table 3. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential To Occur within the Project Area
	ESA	CESA/ NPPA	Other		
Heckard's pepper-grass *(Lepidium latipes* var. *heckardii)*	–	–	1B.2	Alkaline flats within valley and foothill grasslands. Elevation: 5–655 feet Bloom Period: March–May	Absent. There is no suitable habitat within the BSA.
Woolly-headed lessingia *(Lessingia hololeuca)*	–	–	3	Clay or serpentine soils in broadleaf upland forests, coastal scrub, lower montane coniferous forests, and valley and foothill grassland. Elevation: 50–1,000 feet Bloom Period: June–October	Absent. There is no suitable habitat within the BSA.
Cotula navarretia (*Navarretia cotulifolia*)	–	–	4.2	Adobe soils of chaparral, cismontane woodland, and valley and foothill grassland. Elevation: 15–6,005 feet Bloom Period: May–June	Absent. There is no suitable habitat within the BSA.
Baker's navarretia *(Navarretia leucocephala* ssp. *bakeri)*	–	–	1B.1	Vernal pools and mesic areas within cismontane woodlands, lower montane coniferous forests, meadows and seeps, and valley and foothill grasslands. Elevation: 15–5,710 feet Bloom Period: April–July	Absent. There is no suitable habitat within the BSA.
California alkali grass (*Puccinellia simplex*)	–	–	1B.2	Alkaline, vernally mesic areas and sinks, flats and lake margins in chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools. Elevation: 5–3,050 feet Bloom Period: March–May	Absent. There is no suitable habitat within the BSA.
Keck's checkerbloom *(Sidalcea keckii)*	FE	–	1B.1	Serpentine and clay soils within cismontane woodland and valley and foothill grasslands. Elevation: 245–2,135 feet Bloom Period: April–May	Absent. There is no suitable habitat within the BSA.

Table 3. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential To Occur within the Project Area
	ESA	CESA/ NPPA	Other		
Suisun Marsh aster (*Symphyotrichum lentum*)	–	–	1B.2	Brackish and freshwater marshes and swamps. Elevation: 0–10 feet Bloom Period: May–November	Absent. There is no suitable habitat within the BSA.
Wright's trichocoronis *(Trichocoronis wrightii* var. *wrightii)*	–	–	2B.1	Alkaline soils in meadows and seeps, marshes and swamps, riparian forest, and vernal pools. Elevation: 15–1,425 feet Bloom Period: May–September	Absent. There is no suitable habitat within the BSA.
Saline clover *(Trifolium hydrophilum)*	–	–	1B.2	Marshes and swamps, mesic and alkaline areas in valley and foothill grassland, and vernal pools. Elevation: 0–985 feet Bloom Period: April–June	Absent. There is no suitable habitat within the BSA.
Invertebrates					
Crotch bumble bee *(Bombus crotchii)*	–	CC	–	Primarily nests underground in open grassland and scrub habitats from the California coast east to the Sierra Cascade and south to Mexico. Survey Period: March-September	Absent. There is no suitable habitat within the BSA.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	–	–	Vernal pools/wetlands. Survey Period: November–April when surface water is present.	Absent. There is no suitable habitat within the BSA.

Table 3. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential To Occur within the Project Area
	ESA	CESA/ NPPA	Other		
Monarch butterfly (*Danaus plexippus*)	FC	–	–	Overwinters along coastal California in wind-protected groves of eucalyptus, Monterey pine and cypress with nearby nectar and water sources; disperses in spring throughout California. Adults breed and lay eggs during the spring and summer, feeding on a variety of nectar sources; eggs are laid exclusively on milkweed plants.	Absent. There is no suitable habitat within the BSA.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	–	–	Found exclusively on its host plant, the elderberry shrub, in riparian and oak woodland/ oak savannah habitats of California's Central Valley from Shasta to Madera counties.	Absent. There are no elderberry shrubs within the BSA, or within 165-ft of the BSA.
Vernal pool tadpole shrimp (*Lepidurus packardi*)	FE	–	–	Vernal pools/wetlands. Survey Period: November-April when surface water is present.	Absent. There is no suitable habitat within the BSA.
Fish					
Green sturgeon (*Acipenser medirostris*)	FT	–	SSC	Anadromous; undammed cold-water rivers that have relatively deep pools with large substrates. Survey Period: N/A	Absent. There is no suitable habitat within the BSA.
Steelhead (CA Central Valley DPS) (*Oncorhynchus mykiss irideus*)	FT	–	–	Fast-flowing, well-oxygenated rivers and streams below dams in the Sacramento and San Joaquin River systems. Survey Period: N/A	Absent. There is no suitable habitat within the BSA.
Chinook salmon (Central Valley spring-run ESU) (*Oncorhynchus tshawytscha*)	FT	CT	–	Undammed rivers, streams, creeks in the Sacramento and San Joaquin River systems. Survey Period: N/A	Absent. There is no suitable habitat within the BSA.

Table 3. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential To Occur within the Project Area
	ESA	CESA/ NPPA	Other		
Longfin smelt (*Spirinchus thaleichthys*)	FC	CT	SSC	Freshwater and coastal estuaries. Survey Period: N/A	Absent. There is no suitable habitat within the BSA.
Pacific eulachon - southern DPS *Thaleichthys pacificus*	FT	–	–	Undammed rivers, streams, creeks, including the Klamath River, Mad River, Redwood Creek, and Smith River. Survey Period: N/A	Absent. There is no suitable habitat within the BSA.
Amphibians					
Western spadefoot (Northern DPS) (*Spea hammondii*)	FPT	–	SSC	California endemic species of vernal pools, swales, and seasonal wetlands in grassland, scrub and woodland habitats throughout the Central Valley and South Coast Ranges. Prefers open areas with sandy or gravelly soils. Survey Period: Winter-Spring.	Absent. There is no suitable habitat within the BSA.
California tiger salamander (Central California DPS) (*Ambystoma californiense*)	FT	CT	CDFW WL	Breeds in vernal pools and seasonal wetlands in grassland or oak woodland habitats; adults are terrestrial using underground refuges such as ground squirrel or gopher burrows. Central Valley and Inner Coast Range. Survey Period: Winter-Spring.	Absent. There is no suitable habitat within the BSA.
Reptiles					
Northwestern pond turtle (*Actinemys marmorata*)	FPT	–	SSC	Requires basking sites and upland habitats up to 0.5 km from water for egg laying. Uses ponds, streams, detention basins, and irrigation ditches. Survey Period: April-September	Potential to Occur. Colusa Basin Drainage Canal and the drainage ditches within the BSA provide suitable habitat.

Table 3. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential To Occur within the Project Area
	ESA	CESA/ NPPA	Other		
Giant garter snake (*Thamnophis gigas*)	FT	CT	–	Freshwater ditches, sloughs, and marshes in the Central Valley. Almost extirpated from the southern parts of its range. Survey Period: April-October	Potential to Occur. The drainage ditches within the BSA provide suitable habitat.
Birds					
Aleutian cackling goose *(Branta hutchinsii leucopareia)*	De-listed	–	CDFW WL	Overwintering habitat includes mudflats, shallow tidal waters, salt marsh, wet grasslands, freshwater marsh, lakes, reservoirs and rivers (breeds in Alaska on various Aleutian Islands; winters in California's Central Valley, with a small wintering population in southwestern Oregon, and migration staging areas around Humboldt Bay and Crescent City in California and New River bottoms in Oregon. Wintering: October-March	Absent. There is no suitable wintering habitat within the BSA.
Western grebe *(Aechmophorus occidentalis)*	–	–	BCC	Winters on salt or brackish bays, estuaries, sheltered sea coasts, freshwater lakes, and rivers. Nests on freshwater lakes and marshes with open water bordered by emergent vegetation. Nesting: June-August	Absent. There is no suitable wintering or nesting habitat within the BSA.

Table 3. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential To Occur within the Project Area
	ESA	CESA/ NPPA	Other		
Clark's grebe *(Aechmophorus clarkii)*	–	–	BCC	Winters on salt or brackish bays, estuaries, sheltered sea coasts, freshwater lakes, and rivers. Breeds on freshwater to brackish marshes, lakes, reservoirs and ponds, with a preference for large stretches of open water fringed with emergent vegetation. Nesting: June-August	Absent. There is no suitable wintering or breeding habitat within the BSA.
Yellow-billed cuckoo (*Coccyzus americanus*)	FT	CE	–	Breeding habitat is generally open woodland with clearings and low, dense, scrubby vegetation associated with watercourses, and includes desert riparian woodlands with willow, Fremont's cottonwood, alder, walnut, box-elder, and dense mesquite. Nests are generally found in deciduous hardwoods with thick bushes, vines, or hedgerows providing dense foliage within 10 meters (33 feet) of ground; prefer riparian patches of at least 81 hectares (200 acres) (Hughes 2020). Winters in South America. Nesting: June 15-August 15	Absent. There is no suitable breeding habitat within or near the BSA.

Table 3. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential To Occur within the Project Area
	ESA	CESA/ NPPA	Other		
Mountain plover (*Charadrius montanus*)	–	–	BCC, SSC	Breeds in the Great Plains/Midwestern U.S.; winters in California, Arizona, Texas, and Mexico; wintering habitat in California includes tilled fields, heavily grazed open grassland, burned fields, and alfalfa fields. Wintering: September-March	Absent. There is no suitable wintering habitat within the BSA.
Western snowy plover (Interior population) *(Charadrius nivosus nivosus)*	–	–	BCC, SSC	Nests on the ground, on open sandy, barrens shores of inland saline lakes (e.g., Salton Sea), on river bars, and manufactured ponds such as wastewater ponds, dredge spoils, and salt evaporation ponds. Nesting: March-September	Absent. There is no suitable breeding habitat within the BSA.
Marbled godwit (*Limosa fedoa*)	–	–	BCC	Nests in Montana, North and South Dakota, Minnesota, into Canada. Winter range along Pacific Coast from British Columbia south to Central America, with small numbers wintering in interior California. Wintering habitat includes coastal mudflats, meadows, estuaries, sandy beaches, sandflats, and salt ponds. Migrant/Wintering in CA: August-April	Absent. There is no suitable wintering habitat within the BSA.

Table 3. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential To Occur within the Project Area
	ESA	CESA/ NPPA	Other		
Willet (*Tringa semipalmata*)	–	–	BCC	Breeds locally in interior of western North America. In California, breeding range includes the Klamath Basin and Modoc Plateau and portions of Mono and possibly Inyo counties. Breeding habitat includes prairies, Breeds in wetlands and grasslands on semiarid plains; in uplands near brackish or saline wetlands; prefers temporary, seasonal, and alkali wetlands over semipermanent and permanent wetlands. Nesting: April-August	Absent. There is no suitable breeding habitat within the BSA.
California gull (nesting colony) *(Larus californicus)*	–	–	BCC, CDFW WL	Nesting occurs in the Great Basin, Great Plains, Mono Lake, and south San Francisco Bay. Breeding colonies located on islands on natural lakes, rivers, or reservoirs. Winters along Pacific Coast from southern British Columbia south to Baja California and Mexico. In California, winters along coast and inland (Central Valley, Salton Sea). Nesting: April-August	Absent. There is no suitable breeding habitat within the BSA.
White-faced ibis *(Plegadis chihi)*	–	–	CDFW WL	Colonial nester; Nests in shallow marshes with islands of emergent vegetation, flooded shoals and mangrove swamps. Nesting: May-August	Absent. There is no suitable breeding habitat within the BSA.
White-tailed kite (*Elanus leucurus*)	–	–	CFP	Nesting occurs within trees in low elevation grassland, agricultural, wetland, oak woodland, riparian, savannah, and urban habitats. Nesting: March-August	Potential to Occur. The riparian woodland immediately adjacent to the BSA along the Colusa Basin Drainage Canal provides suitable breeding habitat.

Table 3. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential To Occur within the Project Area
	ESA	CESA/ NPPA	Other		
Golden eagle (*Aquila chrysaetos*)	–	–	CFP, CDFW WL	Nesting habitat includes mountainous canyon land, rimrock terrain of open desert and grasslands, riparian, oak woodland/ savannah, and chaparral. Nesting occurs on cliff ledges, river banks, trees, and human-made structures (e.g., windmills, platforms, and transmission towers). Breeding occurs throughout California, except the immediate coast, Central Valley floor, Salton Sea region, and the Colorado River region, where they can be found during Winter. Nesting: February-August Wintering in Central Valley: October-February	Absent. There is no suitable breeding habitat in the BSA.
Bald eagle (*Haliaeetus leucocephalus*)	Delisted	CE	CFP	Typically nests in forested areas near large bodies of water in the northern half of California; nest in trees and rarely on cliffs; wintering habitat includes forest and woodland communities near water bodies (e.g., rivers, lakes), wetlands, flooded agricultural fields, open grasslands. Nesting: February-September Wintering: October-March	Potential to Occur. There is no suitable breeding habitat in the BSA, but there is suitable winter foraging habitat.
Swainson's hawk (*Buteo swainsoni*)	–	CT	–	Nesting occurs in trees in agricultural, riparian, oak woodland, scrub, and urban landscapes. Forages over grassland, agricultural lands, particularly during disking/harvesting, irrigated pastures. Nesting: March-August	Potential to Occur. The riparian woodland immediately adjacent to the BSA along the Colusa Basin Drainage Canal provides suitable breeding habitat.

Table 3. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential To Occur within the Project Area
	ESA	CESA/ NPPA	Other		
Burrowing owl *(Athene cunicularia)*	--	--	BCC, SSC	Nests in burrows or burrow surrogates in open, treeless, areas within grassland, steppe, and desert biomes. Often with other burrowing mammals (e.g., prairie dogs, California ground squirrels). May also use human-made habitat such as agricultural fields, golf courses, cemeteries, roadside, airports, vacant urban lots, and fairgrounds. Nesting: February-August	Low Potential to Occur. The banks of drainage ditches and the sides the of the levees provide marginally suitable burrowing habitat.
Merlin *(Falco columbarius)*	–	–	CDFW WL	Breeds in Oregon, Washington north into Canada. Winters in southern Canada to South America, including California. Breeds near forest openings, fragmented woodlots, and riparian areas. Wintering habitat includes wide variety, open forests, grasslands, tidal flats, plains, and urban settings. Wintering in the Central Valley: September-April; does not breed in California.	Potential to Occur. The riparian woodland immediately adjacent to the BSA along the Colusa Basin Drainage Canal provides suitable wintering habitat.
Yellow-billed magpie (*Pica nuttallii*)	–	–	BCC	Endemic to California; found in the Central Valley and coast range south of San Francisco Bay and north of Los Angeles County; nesting habitat includes oak savannah with large in large expanses of open ground; also found in urban parklike settings. Nesting: April-June	Potential to Occur. The riparian woodland immediately adjacent to the BSA along the Colusa Basin Drainage Canal provides suitable breeding habitat.

Table 3. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential To Occur within the Project Area
	ESA	CESA/ NPPA	Other		
Oak titmouse (*Baeolophus inornatus*)	–	–	BCC	Nests in tree cavities within dry oak or oak-pine woodland and riparian; where oaks are absent, they nest in juniper woodland, open forests (gray, Jeffrey, Coulter, pinyon pines and Joshua tree). Nesting: March-July	Potential to Occur. The riparian woodland immediately adjacent to the BSA along the Colusa Basin Drainage Canal provides suitable breeding habitat.
Bank swallow (*Riparia riparia*)	–	CT	–	Nests colonially along coasts, rivers, streams, lakes, reservoirs, and wetlands in vertical banks, cliffs, and bluffs in alluvial, friable soils. May also nest in sand, gravel quarries and road cuts. In California, breeding range includes northern and central California. Nesting: May-July	Absent. There is no suitable breeding habitat in the BSA.
Wrentit (*Chamaea fasciata*)	–	–	BCC	Coastal sage scrub, northern coastal scrub, chaparral, dense understory of riparian woodlands, riparian scrub, coyote brush and blackberry thickets, and dense thickets in suburban parks and gardens. Nesting: March-August	Absent. There is no suitable breeding habitat in the BSA.
Belding's savannah sparrow (*Passerculus sandwichensis beldingi*)	–	CE	BCC	Resident coastally from Point Conception south into Baja California; coastal salt marsh. Year-round resident; nests March-August	Absent. There is no suitable breeding habitat within the BSA.
Song sparrow "Modesto" (*Melospiza melodia heermanni*)	–	–	SSC	Resident in central and southwest California, including Central Valley; nests in marsh, scrub habitat. Nesting: April-June	Potential to Occur. The emergent vegetation found along the edges of the canals and agricultural fields within the BSA provide suitable breeding habitat.

Table 3. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential To Occur within the Project Area
	ESA	CESA/ NPPA	Other		
Tricolored blackbird (*Agelaius tricolor*)	–	CT	BCC, SSC	Breeds locally west of Cascade-Sierra Nevada and southeastern deserts from Humboldt and Shasta counties south to San Bernardino, Riverside and San Diego counties. Central California, Sierra Nevada foothills and Central Valley, Siskiyou, Modoc and Lassen counties. Nests colonially in freshwater marsh, blackberry bramble, milk thistle, triticale fields, weedy (mustard, mallow) fields, giant cane, safflower, stinging nettles, tamarisk, riparian scrublands and forests, fiddleneck and fava bean fields. [1] Nesting: March-August	Absent. There is no suitable breeding habitat within the BSA.
Bullock's oriole (*Icterus bullockii*)	–	–	BCC	Breeding habitat includes riparian and oak woodlands. Nesting: March-July	Potential to Occur. The riparian woodland immediately adjacent to the BSA along the Colusa Basin Drainage Canal provides suitable breeding habitat.
Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*)	–	–	BCC, SSC	Breeds in salt marshes of San Francisco Bay; winters San Francisco south along coast to San Diego County. Nesting: March-July	Absent. There is no suitable breeding habitat within the BSA.

[1]Beedy, E. C., W. J. Hamilton, III, R. J. Meese, D. A. Airola, and P. Pyle. 2020. Tricolored Blackbird (*Agelaius tricolor*), version 1.0. In *Birds of the World* (P. G. Rodewald, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.tribla.01.

Table 3. Special-Status Species Evaluation

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential To Occur within the Project Area
	ESA	CESA/ NPPA	Other		
Mammals					
Pallid bat *(Antrozous pallidus)*	–	–	SSC	Crevices in rocky outcrops and cliffs, caves, mines, trees (e.g., basal hollows of redwoods, cavities of oaks, exfoliating pine and oak bark, deciduous trees in riparian areas, and fruit trees in orchards). Also roosts in various human structures such as bridges, barns, porches, bat boxes, and human occupied as well as vacant buildings (Western Bat Working Group [WBWG] 2024). Survey Period: April-September	Potential to Occur. The riparian woodland immediately adjacent to the BSA along the Colusa Basin Drainage Canal provides suitable roosting habitat.
Western red bat (*Lasiurus frantzii*)	–	–	SSC	Roosts in foliage of trees or shrubs; Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores) (WBWG 2024). Survey Period: April-September	Potential to Occur. The riparian woodland immediately adjacent to the BSA along the Colusa Basin Drainage Canal provides suitable roosting habitat.
American badger *(Taxidea taxus)*	–	–	SSC	Drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Survey Period: Any season	Absent. There is no suitable habitat within the BSA.

Status Codes:
FESA Federal Endangered Species Act
CESA California Endangered Species Act
FE FESA listed, Endangered
FT FESA listed, Threatened
FPT Formally Proposed for FESA listing as Threatened
FC Candidate for FESA listing as Threatened or Endangered
BCC USFWS Bird of Conservation Concern (USFWS 2021)

Table 3. Special-Status Species Evaluation					
	Status				
Common Name (Scientific Name)	ESA	CESA/ NPPA	Other	Habitat Description/ Species Ecology	Potential To Occur within the Project Area

CE	CESA- or NPPA listed, Endangered
CT	CESA- or NPPA-listed, Threatened
CC	Candidate for CESA listing as Endangered or Threatened
CFP	California Fish and Game Code Fully Protected Species (§ 3511-birds, § 4700-mammals, §5050-reptiles/amphibians)
SSC	CDFW Species of Special Concern
CDFW WL	CDFW Watch List
CNDDB	Species that is tracked by CDFW's CNDDB but does not have any of the above special-status designations otherwise
1A	CRPR/Presumed extinct
1B	CRPR/Rare or Endangered in California and elsewhere
2A	CRPR/Plants presumed extirpated in California but common elsewhere
2B	CRPR/Plants rare, threatened, or endangered in California but more common elsewhere
3	CRPR/Plants About Which More Information is Needed – A Review List
4	CRPR/Plants of Limited Distribution – A Watch List
0.1	Threat Rank/Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2	Threat Rank/Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3	Threat Rank/Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)
Delisted	Formally Delisted

4.6.1 Plants

4.6.1.1 Parry's Rough Tarplant

Parry's rough tarplant (*Centromadia parryi* ssp. *rudis*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 species. This species is an herbaceous annual that occurs in vernal pools and valley and foothill grassland with alkaline and vernally mesic soils, seeps, and sometimes roadsides. Parry's rough tarplant blooms from May through October and is known to occur at elevations ranging from 0 to 330 feet above MSL. Parry's rough tarplant is endemic to California; its current range includes Butte, Colusa, Glenn, Lake, Merced, Modoc, Sacramento, San Joaquin, Solano, Stanislaus, and Yolo counties (CNPS 2024a).

There are no CNDDB occurrences of Parry's rough tarplant within 5 miles of the BSA (CDFW 2024). The *Avena* spp. – *Bromus* spp. Herbaceous Semi-natural Alliance and levee roadside margins within the BSA represent marginally suitable habitat for this species. Parry's rough tarplant has a low potential to occur within the BSA.

4.6.1.2 Woolly Rose-Mallow

Woolly rose-mallow (*Hibiscus lasiocarpos* var. *occidentalis*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is a rhizomatous, herbaceous perennial that occurs in marshes and freshwater swamps, and often in riprap on sides of levees. Woolly rose-mallow blooms from June through September and is known to occur at elevations ranging from sea level to 395 feet above MSL. Woolly rose-mallow is endemic to California; the current range of this species in California includes Butte, Contra Costa, Colusa, Glenn, Sacramento, San Joaquin, Solano, Sutter, and Yolo counties (CNPS 2024a).

There are no CNDDB occurrences of woolly rose-mallow within 5 miles of the BSA (CDFW 2024). The Colusa Basin Drainage Canal and the ditches within the BSA represent suitable habitat for this species. Woolly rose-mallow has potential to occur within the BSA.

4.6.2 Reptiles

4.6.2.1 Northwestern Pond Turtle (Actinemys marmorata)

The northwestern pond turtle (NWPT, *Actinemys marmorata*) is proposed for listing as *Threatened* pursuant to the federal ESA and is considered an SSC by CDFW. The range of the northwestern pond turtle in California extends from the Coast Ranges on the Oregon border southward to Marin County, throughout the lower elevations and foothills of the southern Cascades and Sierra Nevada Mountains, and within the Sacramento and San Joaquin Valleys (Thomson et al. 2016). They can occur in a variety of waters including ponds, lakes, streams, reservoirs, rivers, settling ponds of wastewater treatment plants, and other permanent and ephemeral wetlands (Bury et al. 2012). However, in streams and other lotic features they generally require slack- or slow-water aquatic microhabitats (Jennings and Hayes 1994). Northwestern pond turtles also require basking areas such as logs, rocks, banks, and brush piles for thermoregulation (Bury et al. 2012). Nesting sites for pond turtles are typically located in annual grasslands adjacent to a watercourse with little slope and hard, dry soil (Ashton et al. 1997). Nesting habitat soils typically display high clay or silt fraction, with few nests located in sandy soils. Nests are usually within 400 meters of a watercourse, with the majority being within 50 meters of the water's edge (Holland 1994).

There are no CNDDB occurrences of NWPT within 5 miles of the BSA (CDFW 2024). The Colusa Basin Drainage Canal and the ditches within the BSA represent suitable habitat for this species. Northwestern pond turtle has potential to occur within the BSA.

4.6.2.2 Giant Garter Snake

The giant garter snake (GGS, *Thamnophis gigas*) is listed as *Threatened* pursuant to both the California and federal ESAs. The giant garter snake is one of the most aquatic garter snakes. It is rarely found far from water and occupies habitat such as marshes and sloughs, irrigation and drainage canals, small lakes and ponds, rice agricultural fields, and low gradient streams. Giant garter snakes are most active from early spring through mid-fall, and use grassy bank-side habitats for basking and higher elevation uplands for

cover and retreat from floodwaters during the inactive winter season. The GGS is endemic to the floors of the Sacramento and San Joaquin valleys of California and probably occurred historically from Butte County south to Buena Vista Lakes in Lake in Kern County (USFWS 1999).

There are 30 CNDDB occurrences of GGS within 5 miles of the BSA (CDFW 2024). The ditches within the BSA represent suitable habitat for this species. Giant garter snakes have potential to occur within the BSA.

4.6.3 Birds

4.6.3.1 Great Blue Heron (Nesting Colony)

Great blue heron (*Ardea herodias*) is not listed pursuant to either the federal or California ESAs, but are protected by the MBTA and California Department of Fish and Game and tracked by CDFW in the CNDDB, as are other colonial nesting water birds [e.g., great egrets (*Ardea alba*), snowy egret (*Egretta thula*)]. Great blue herons nest colonially in trees, bushes, on the ground, and artificial structure, generally near water and in places protected from predators and disturbance, such as islands. The nesting colonies may be located within a variety of vegetation communities near water.

There is one CNDDB occurrence of great blue heron within 5 miles of the BSA (CDFW 2024). In addition, a great blue heron rookery was observed within the immediate vicinity of the BSA, adjacent to Site A. The S*alix gooddingii - Salix laevigata* Forest & Woodland Alliance found at the margins of Site A and Site B along the Colusa Basin Drainage Canal represent suitable breeding habitat for this species. Great blue heron is present adjacent to the BSA.

4.6.3.2 Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) has been delisted under the federal ESA but remains listed as *Endangered* under the California ESA. It is fully protected pursuant to the California Fish and Game Code Section 3511 and the federal Bald and Golden Eagle Protection Act. Bald eagles breed at lower elevations in the northern Sierra Nevada and North Coast ranges. Bald eagles breed in forested areas adjacent to large waterbodies (Buehler 2020). Tree species used for nesting are quite variable and includes conifers (dominant where available), oaks, hickories, cottonwoods, and aspens (Buehler 2020). Nest trees are generally the largest tree available in a suitable area (Buehler 2020). Breeding activity occurs from late-February through September, with peaks in activity from March to June.

There are no CNDDB occurrences of bald eagle within 5 miles of the BSA (CDFW 2024). The Colusa Basin Drainage Canal and agricultural fields surrounding the BSA represent suitable winter foraging habitat for this species. Bald eagles have potential to occur within the BSA.

4.6.3.3 Swainson's Hawk

The Swainson’s hawk (*Buteo swainsoni*) is listed as *Threatened* and is protected pursuant to the California Endangered Species Act. This species nests in North America (Canada, western U.S., and Mexico) and typically winters from South America north to Mexico. However, a small population has been observed

wintering in the Sacramento-San Joaquin River Delta (Bechard et al. 2020). In California, the nesting season for Swainson's hawk ranges from mid-March to late August.

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

There are 53 CNDDB occurrences of Swainson's hawk within 5 miles of the BSA (CDFW 2024). The S*alix gooddingii - Salix laevigata* Forest & Woodland Alliance found at the margins of Site A and Site B, along the Colusa Basin Drainage Canal, represent suitable breeding habitat for this species. Swainson's hawk has potential to occur within the BSA.

4.6.3.4 Burrowing Owl

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

There are no CNDDB occurrences of burrowing owl within 5 miles of the BSA (CDFW 2024). The banks of the ditches and sides of the Colusa Basin Drainage Canal levee represent marginally suitable burrowing habitat for this species. Burrowing owls have low potential to occur within the BSA.

4.6.3.5 Merlin

The merlin (*Falco columbarius*) is not listed pursuant to either the California or federal ESAs but is a CDFW Watch List species. This falcon breeds in Canada and Alaska and occurs in California as a migrant and during the nonbreeding season (September through April). Foraging habitat in winter includes open forests, grasslands, and tidal flats (Warkentin et al. 2020).

There are no CNDDB occurrences of merlin within 5 miles of the BSA (CDFW 2024). The S*alix gooddingii - Salix laevigata* Forest & Woodland Alliance found at the margins of Site A and Site B, along the Colusa

Basin Drainage Canal, represent suitable wintering habitat for this species. Merlin has potential to occur within the BSA.

4.6.3.6 Yellow-billed Magpie

The yellow-billed magpie (*Pica nuttalli*) is not listed pursuant to either the California or federal ESAs but is considered a USFWS BCC. This endemic species is a yearlong resident of the Central Valley and Coast Ranges from San Francisco Bay to Santa Barbara County. Yellow-billed magpies build large, bulky nests in trees in a variety of open woodland habitats, typically near grassland, pastures, or cropland. Nest building begins in late January to mid-February, which may take up to 6 to 8 weeks to complete, with eggs laid from April through May, and fledging from May through June (Koenig and Reynolds 2020). The young leave the nest about 30 days after hatching (Koenig and Reynolds 2020). Yellow-billed magpies are highly susceptible to West Nile Virus, which may have been the cause of death to thousands of magpies during 2004-2006 (Koenig and Reynolds 2020).

There are no CNDDB occurrences of yellow-billed magpie within 5 miles of the BSA (CDFW 2024). The S*alix gooddingii - Salix laevigata* Forest & Woodland Alliance found at the margins of Site A and Site B, along the Colusa Basin Drainage Canal, represent suitable breeding habitat for this species. Yellow-billed magpie has potential to occur within the BSA.

4.6.3.7 Oak Titmouse

Oak titmouse (*Baeolophus inornatus*) is not listed or protected under either state or federal ESAs but is considered a USFWS BCC. Oak titmouse breeding range includes southwestern Oregon south through California's Coast, Transverse, and Peninsular ranges, western foothills of the Sierra Nevada, into Baja California; they are absent from the humid northwestern coastal region and the San Joaquin Valley (Cicero et al. 2020). They are found in dry oak or oak-pine woodlands but may also use scrub oaks or other brush near woodlands (Cicero et al. 2020). Nesting occurs during March through July.

There are no CNDDB occurrences of oak titmouse within 5 miles of the BSA (CDFW 2024). The *Salix gooddingii - Salix laevigata* Forest & Woodland Alliance found at the margins of Site A and Site B, along the Colusa Basin Drainage Canal, represent suitable breeding habitat for this species. Oak titmouse has potential to occur within the BSA.

4.6.3.8 Song Sparrow "Modesto" Population

The song sparrow (*Melospiza melodia*) is considered one of the most polytypic songbirds in North America (Miller 1956 as cited in Arcese et al. 2020). The subspecies *Melospiza melodia heermanni* includes as synonyms *M. m. mailliardi* (the *Modesto song sparrow*) and *M. m. cooperi* (Arcese et al. 2020). The *Modesto song sparrow* is not listed and protected pursuant to either the California or federal ESAs but is considered a CDFW SSC. The subspecies *M. m. heermanni* can be found in central and southwestern California to northwestern Baja California (Arcese et al. 2020). Song sparrows in this group may have slight morphological differences but they are genetically indistinguishable from each other. The *Modesto song sparrow* occurs in the Central Valley from Colusa County south to Stanislaus County, and east of the

Suisun Marshes (Grinnell and Miller 1944). Nesting habitat includes riparian thickets and freshwater marsh communities, with nesting occurring from April through June.

There are no CNDDB occurrences of song sparrow within 5 miles of the BSA (CDFW 2024). The emergent vegetation found at the margins of the Colusa Basin Drainage Canal, ditches, and agricultural fields represent suitable breeding habitat for this species. Song sparrow has potential to occur within the BSA.

4.6.3.9 Bullock's Oriole

The Bullock's oriole (*Icterus bullockii*) is not listed pursuant to either the California or federal ESAs but is currently a BCC according to the USFWS. In California, Bullock's orioles are found throughout the state except the higher elevations of mountain ranges and the eastern deserts (Small 1994). They are found in riparian and oak woodlands where nests are built in deciduous trees, but may also use orchards, conifers, and eucalyptus trees (Flood et al. 2020). Nesting occurs from March through July.

There are no CNDDB occurrences of Bullock's oriole within 5 miles of the BSA (CDFW 2024). The S*alix gooddingii - Salix laevigata* Forest & Woodland Alliance found at the margins of Site A and Site B, along the Colusa Basin Drainage Canal, represent suitable breeding habitat for this species. Bullock's oriole has potential to occur within the BSA.

4.6.4 Mammals

4.6.4.1 Pallid Bat

The pallid bat (*Antrozous pallidus*) is not listed pursuant to either the federal or California ESAs; however, this species is considered an SSC by CDFW. The pallid bat is a large, light-colored bat with long, prominent ears and pink, brown, or grey wing and tail membranes. This species ranges throughout North America from the interior of British Columbia, south to Mexico, and east to Texas. The pallid bat inhabits low elevation (below 6,000 feet amsl) rocky arid deserts and canyonlands, shrub-steppe grasslands, karst formations, and high elevation (above 7,000 feet amsl) coniferous forest. This species roosts alone or in groups in the crevices of rocky outcrops and cliffs, caves, mines, trees, and in various human structures such as bridges and barns. The pallid bat is a feeding generalist that gleans a variety of arthropod prey from surfaces as well as capturing insects on the wing. Foraging occurs over grasslands, oak savannahs, ponderosa pine forests, talus slopes, gravel roads, lava flows, fruit orchards, and vineyards. Although this species utilizes echolocation to locate prey, they often use only passive acoustic cues. This species is not thought to migrate long distances between summer and winter sites (Western Bat Working Group [WBWG] 2024).

There are no CNDDB occurrences of pallid bat within 5 miles of the BSA (CDFW 2024). The S*alix gooddingii - Salix laevigata* Forest & Woodland Alliance found at the margins of Site A and Site B, along the Colusa Basin Drainage Canal, represent suitable roosting habitat for this species. Pallid bat has potential to occur within the BSA.

4.6.4.2 Western Red Bat

The western red bat (*Lasiurus frantzii*) is not listed pursuant to either the California or federal ESAs; however, this species is considered an SSC by CDFW. The western red bat is easily distinguished from other western bat species by its distinctive red coloration. This species is broadly distributed with its range extending from southern British Columbia in Canada through Argentina and Chile in South America, and including much of the western U.S. This solitary species day roosts primarily in the foliage of trees or shrubs in edge habitats bordering streams or open fields, in orchards, and occasionally urban areas. They may be associated with intact riparian habitat, especially with willows, cottonwoods, and sycamores. This species may occasionally utilize caves for roosting as well. The western red bat feeds on a variety of insects and generally begin to forage 1 to 2 hours after sunset. This species is considered highly migratory; however, the timing of migration and the summer ranges of males and females may be different (WBWG 2024).

There are no CNDDB occurrences of western red bat within 5 miles of the BSA (CDFW 2024). The S*alix gooddingii - Salix laevigata* Forest & Woodland Alliance found at the margins of Site A and Site B, along the Colusa Basin Drainage Canal, represent suitable roosting habitat for this species. Western red bat has potential to occur within the BSA.

4.7 Critical Habitat or Essential Fish Habitat

There is no designated critical habitat mapped within the BSA (USFWS 2024).

Based on the literature review, Essential Fish Habitat for steelhead (*Oncorhynchus mykiss irideus*) and Chinook salmon (*Oncorhynchus tshawytscha*) may be present in the *El Dorado Bend, California* 7.5-minute quadrangle (NOAA 2024c). However, there is no habitat for special-status fish within the BSA because the outlet of the Colusa Basin Drainage Canal into the Sacramento River is dammed at Knights Landing, California.

4.8 Wildlife Movement Corridors and Nursery Sites

According to CNDDB, there are no California essential habitat corridors within the BSA (CDFW 2024). During the site assessment, ECORP observed great blue heron rookeries within the immediate vicinity and southwest of Site A. The riparian woodland within the Colusa Basin Drainage Canal provides suitable habitat for heron and egret rookeries.

5.0 IMPACT ASSESSMENT AND RECOMMENDATIONS

This section specifically addresses questions raised by the Biological Resources section of the Environmental Checklist Form in Appendix G of the CEQA Guidelines.

5.1 CEQA Checklist Criteria IV(a) – Special-Status Species

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 Wildlife or U.S. Fish and Wildlife Service?

5.1.1 Special-Status Plants

The Project Area supports potential habitat for special-status plants, as identified in Table 3. No special-status plants were found during the BRA or ARD survey; however, protocol-level surveys have not been conducted. If a special-status plant is found within the Project Area, Project impacts could include damage or loss of individual plants, loss of occupied habitat, and indirect impacts such as disturbance from human encroachment and changes in habitat quality due to alteration of hydrology, erosion, and transport of soil, debris or pollutants into occupied habitat from adjacent Project Areas.

The following measures are recommended to minimize potential impacts to special-status plants:

- Where feasible, Project-related activities shall be restricted to previously developed or disturbed areas to avoid disturbance of habitats that may support special-status plants.
- If suitable habitat for special-status plants cannot be avoided, the applicant shall perform special-status plant surveys according to CDFW, CNPS, and USFWS protocols (CDFW 2018; CNPS 2001; USFWS 2000). Surveys shall be conducted throughout all suitable habitat within the Project footprint and a 25-foot buffer, where accessible, to address potential direct and indirect impacts of the Project. Surveys shall be conducted by a qualified biologist and timed according to the identifiable period for target species (typically the blooming period). To the extent feasible, known reference populations will be visited prior to surveys to confirm target species are evident and identifiable at the time of the survey.
- If no special-status plants are found, no further measures pertaining to special-status plants are necessary.
- If special-status plants are identified onsite, the Project shall be modified to the extent feasible to prevent disturbance or loss of special-status plants. No-disturbance buffers shall be established around sensitive plant populations to be preserved in or adjacent to the Project Area. A 25-foot buffer should be maintained between project activities and sensitive plant populations, unless otherwise determined by a qualified biologist. Buffer distances may vary between species

depending on listing status, rarity, and other factors. Buffer areas will be clearly demarcated in the field, and no construction or ground-disturbing activities will occur within the boundaries of the delineated area.

- If a special-status plant species is found and avoidance is not feasible, additional measures may be developed in consultation with CDFW, USFWS and/or the CEQA Lead Agency.
- If a state or federally listed threatened or endangered plant or a plant that is a candidate for state listing is found onsite, the applicant shall consult with CDFW and/or USFWS, as applicable, to determine appropriate avoidance and minimization measures. If the plants cannot be avoided, an incidental take permit and compensatory mitigation may be required.

5.1.2 Special-Status Reptiles

The upland areas above the OHWM along the ditches within Site A, Site B, and the Site B Spoils Area provide upland habitat for nesting NWPT and upland habitat for GGS. The aquatic areas below the OHWM along the ditches within Site A, Site B, and the Site B Spoils Area provide suitable aquatic habitat for GGS and NWPT. Northwestern pond turtle nests typically occur within 50 to 400 meters of aquatic habitat (Holland 1194) and are often found in the annual grasslands, such as the *Avena* spp. – *Bromus* spp. Herbaceous Semi-Natural Alliance found within the BSA (Ashton et al. 1997). This vegetation community above the ditches within the BSA also provides non-aquatic basking sites for giant garter snakes and protection from flooding during the winter season.

Although these species were not observed during the field reconnaissance site visit, targeted surveys for these species have not been conducted. If special-status reptiles occur within the BSA, Project impacts could include injury or mortality, loss of occupied habitat, and indirect impacts such as disturbance from human encroachment and changes in habitat quality due to alteration of hydrology, erosion, and transport of soil, debris, or pollutants into occupied habitat from adjacent Project Areas.

5.1.2.1 Northwestern Pond Turtle AMMs

Northwestern pond turtle (NWPT) has the potential to occur within the Colusa Basin Drainage Canal, drainage ditches, and associated uplands within the BSA. Implementation of the giant garter snake exclusion recommended measures would contribute to avoiding and minimizing potential impacts to northwestern pond turtles. Additionally, prior to establishment of construction staging and in-water work areas, implementation of the following recommended measures would avoid potential impacts to NWPT:

- If NWPT becomes listed as threatened pursuant to the federal ESA prior to or during the course of construction and Project activities have the potential for "take" of an individual or nest, then the Project proponent will initiate Section 7 consultation with the USFWS and obtain a Biological Opinion. The Project will implement the measures within the Biological Opinion.
- A qualified biologist will conduct a preconstruction survey for NWPT two weeks prior to and 48 hours before commencement of ground-disturbing activities within 160 feet of aquatic habitat and prior to in-water work activities. The surveys will be timed to coincide with the time of day when turtles are most likely to be active and visible (during the cooler portion of the day, 8:00

a.m. to 12:00 p.m. during spring, summer, and late summer). Prior to conducting presence/absence surveys, the biologist will locate the microhabitats for turtle basking (i.e., logs, rocks, brush thickets) and determine a location to quietly observe turtles. Each survey will include a wait time after arriving onsite to allow startled turtles to return to open basking areas and an observation period. If NWPT is observed, a NWPT management, monitoring, and relocation plan will be prepared prior to commencement of construction in suitable habitat.

- Implementation of the giant garter snake exclusion recommended measures would contribute to avoiding and minimizing potential impacts to NWPTs. A qualified biologist will include NWPT in their exclusion fence clearance surveys.
- If a NWPT is observed during construction activities, the construction activities will be temporarily halted to allow a qualified biologist the opportunity to hand capture the individual and relocate them to suitable aquatic habitat that will not be disturbed by the Project. The relocation effort and location will be documented in a report and submitted to CDFW and a CNDDB report will be completed within 60 days of the observation to document the occurrence. If NWPT eggs are unearthed, construction activities will be halted within 50 feet of the observation, a light soil layer will immediately be placed over the eggs, and CDFW will immediately be consulted on how to proceed with a nest relocation or transportation to wildlife rehabilitation center.

5.1.2.2 Giant Garter Snake AMMs

Giant garter snake (GGS) has the potential to occur above and below the OHWM of the ditches mapped within the BSA. Implementation of the following recommended AMMs would avoid potential impacts to giant garter snake:

- Consult with USFWS and CDFW and if necessary, obtain a USFWS Biological Opinion and an Incidental Take Permit 2081, pursuant to Section 2080 of the California Fish and Game Code, or Consistency Determination.
- A GGS handling and relocation plan outlining appropriate procedures for these activities will be prepared for the Project and provided to USFWS and CDFW (the Agencies) for review and approval prior to commencement of construction. The generalized content is anticipated to include conditions under which the biologist may order work stop and re-start; approved monitoring equipment and processing procedures, and procedures for treating an injured animal, including approved veterinary treatment facilities and their location.
- In addition to the AMMs listed herein, if compensatory mitigation is required as a result of Project impacts, it will be purchased for the permanent impacts to GGS habitat if permanent impacts are proposed, as identified in the Biological Assessment report and agreeable to the Agencies. The mitigation credits will be purchased from a CDFW and USFWS approved mitigation bank. The transaction will take place through a purchase and sale agreement, and funds must be transferred within 30 days, and prior to the initiation of any construction activities that would result in direct impacts to GGS.

- Prior to initiation of ground disturbing work, the District will submit to the Agencies for approval the name and resume of an individual who will act as the Designated Biologist. The Designated Biologist shall be responsible for monitoring construction activities for compliance with measures to minimize and fully mitigate or avoid the incidental take of GGS and its associated habitat. Resumes for all biological staff who will be acting as biological monitors will also be submitted to the agencies for approval.
- Construction activities will be conducted between May 1 and October 1, if possible, when direct mortality will be lessened because the snakes can move to avoid danger. If work is not able to occur during the active season, the areas scheduled for ground disturbance/fill will be excluded with silt fence containing one-way exits for at least two weeks prior to the inactive season, to reduce the likelihood of individuals wintering within the area.
- If required by the Agencies, prior to ground disturbing activities, GGS exclusion fencing will be installed around the work area. If exclusion fencing is installed, it will be installed during the GGS active period between May 1st and October 1st. The exclusion fencing shall be installed under the supervision of a qualified biologist to ensure the fencing is installed in a manner that excludes GGS from the work area. The biologist will conduct weekly fence and environmental compliance checks and immediately report any deficiencies to the superintendent.
- Twenty-four hours prior to the commencement of construction activities, the Project Area shall be surveyed by a biologist approved by the agencies to document the presence or absence of GGS. The biologist will provide the Agencies with a written report that adequately documents the preconstruction survey. If GGS is observed during the preconstruction survey, the report will be provided to the Agencies within 24-hours of commencement of construction activities. The Project will be re-inspected by the monitoring biologist whenever a lapse of two weeks or greater has occurred.
- Construction personnel will participate in a Worker Environmental Awareness Training program prior to the initiation of construction activities. The training will educate all workers and site personnel about identification of GGS and appropriate actions to be taken in the event GGS are observed during construction. Under this training, information regarding the life history of GGS, identification of aquatic and upland GGS habitat within the Project Area, a description of activities that qualify as take of the species including harassment, destruction of habitat, and death of an individual.
- During construction operations, excavation will be accomplished by equipment located and operated outside of the aquatic resources as much as feasible. Stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and all operations will be confined to the minimal area necessary. All Project related vehicles will observe a 20-mile-per-hour speed limit within construction areas, except on existing paved roads where they will adhere to the posted speed limit. All construction related holes will be covered to prevent entrapment of individuals. All Project personnel shall look beneath parked vehicles and construction equipment for snakes prior to their movement.

- If required by the Agencies, a qualified biologist will conduct daily visual surveys of the work area within GGS aquatic or upland habitat prior to any earthmoving activities to verify there are no GGS in the area.
- If GGS is encountered, the applicant or its consultant shall halt construction until the snake has left the area under its own volition and notify the Agencies immediately to determine the appropriate procedures related to the collection or relocation of the snake. A report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the snake, within one business day. The biologist will be required to report any take of listed species to the Agencies immediately by telephone and written letter or email within one day of the incident.
- Standard construction Best Management Practices (BMPs) will be implemented to minimize potential for erosion and sedimentation. BMP materials shall not contain monofilament and or have fused joints that provide an entanglement risk to wildlife. Temporarily disturbed habitat will be revegetated with a RD 108 approved seed mix at the completion of construction.
- If GGS is encountered, a CNDDB report will be completed within 60 days of the encounter.
- After completion of construction activities, the applicant will remove any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Restoration work includes such activities as revegetating the banks of the ditches with RD 108 approved seed mix.
- If work must occur during the GGS inactive period (i.e., between October 2 and April 30), when snakes are more vulnerable to injury or mortality, the following additional protective measures will be implemented, if required by the Agencies.
    - Areas of suitable habitat that are scheduled for excavation or ground disturbance/fill will be excluded with GGS exclusion fencing with one-way exits for at least two weeks prior to the inactive season (or the drop off in warm temperatures), to reduce the likelihood of brumation by individuals within the area.
    - An Agency approved monitoring biologist will conduct on-site daily monitoring for the duration of any ground-disturbing activities (e.g., grading, or other earth-moving activities) after October 1.
    - All vegetation within 200 feet of aquatic habitat will be cleared prior to the GGS inactive season (i.e., vegetation clearing will be completed by October 1 for work the following winter).

5.1.3 Special-Status Birds

The S*alix gooddingii - Salix laevigata* Forest & Woodland Alliance mapped at along western margins of Site A and Site B provide suitable tree-nesting habitat for special-status birds species. In addition, the

banks of ditches and the *Avena* spp. – *Bromus* spp. Herbaceous Semi-Natural Alliance observed within the BSA provide habitat for ground-nesting or burrowing bird species.

Multiple species of birds protected under the MBTA were observed within the BSA during the field reconnaissance site visit; however, nesting surveys were not conducted. Project activities could potentially cause the injury or mortality of adults, young, or eggs of birds and raptors protected under the federal MBTA; or potentially cause indirect impacts such as disturbance from human encroachment and changes in habitat quality due to alteration of vegetation.

5.1.3.1 Nesting Birds AMMs (including Raptors)

The Project Area supports potential nesting habitat for special-status birds, including raptors, and other common birds protected under the MBTA. Prior to ground-disturbing activities, the following measures are recommended to minimize potential impacts to special-status birds:

- A qualified biologist shall conduct a preconstruction survey for nesting raptors, within the Project Area and a 500-foot buffer, within 14 days of commencement of Project activities (can be conducted concurrently with nesting bird surveys, as appropriate). If an active nest is located, a no-disturbance buffer will be established as determined by the biologist and maintained until a qualified biologist determines the young have fledged and are no longer reliant upon the nest for survival.
- A qualified biologist shall conduct a preconstruction nesting bird (non-raptor) survey (can be conducted concurrently with raptor surveys, as appropriate) of all areas associated with construction activities, and a 100-foot buffer around these areas, within 14 days prior to commencement of construction. If active nests are found, a no-disturbance buffer around the nest shall be established. The buffer distance shall be established by a qualified biologist. The buffer shall be maintained until the fledglings are capable of flight and become independent of the nest, to be determined by a qualified biologist. Once the young are independent of the nest, no further measures are necessary.

5.1.3.2 Swainson's Hawk

Swainson's hawk has the potential to occur within and immediately adjacent to the BSA. In order to avoid potential impacts to Swainson's hawk, the following avoidance and minimization measures are recommended:

- If Project activities are scheduled during the Swainson's hawk nesting season (March 1 to August 31), then prior to beginning work on the Project, a qualified biologist shall survey for Swainson's hawk nesting activity. The survey area shall include a 0.25-mile distance surrounding the Project Area. The qualified biologist shall conduct surveys according to the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee 2000) or, if proposing an alternate survey methodology, shall submit the proposed survey timing and methods to CDFW for review and written approval prior to initiation of surveys. Survey results shall be submitted to CDFW for review. If Swainson's hawk

nesting activity is observed during the survey, then the survey results shall be submitted to CDFW for review and acceptance prior to starting Project activities. If the qualified biologist identifies nesting Swainson's hawks, then they shall recommend a no disturbance buffer, and the contractor shall implement the buffer under the supervision of a qualified biologist. Project activities shall be prohibited within the no disturbance buffer between March 1 to August 31, unless otherwise approved in writing by CDFW, which may include consultation pursuant to California ESA and an Incidental Take Permit, or a qualified biologist determining that the nest is no longer active. If there is a lapse in Project-related work of 14 days or longer, then an additional survey shall be conducted prior to resuming Project activities.

5.1.3.3 Western Burrowing Owl AMMs

Although no burrowing owls or their sign (e.g., white-wash, pellets, or feathers) were observed within the BSA, suitable burrows were observed at Site A and Site B. Therefore, the following general AMMs shall be implemented to avoid impacts to western burrowing owl:

- A preconstruction survey for nesting burrowing owl will be conducted by a qualified biologist within 14 days prior to commencement of Project activities within the BSA and a 250-foot buffer. Surveys shall be conducted at appropriate times and in appropriate weather conditions to maximize detection. If active burrowing owl burrows are found, an avoidance buffer will be immediately established, and an avoidance plan will be prepared in consultation with CDFW prior to the commencement of any ground-disturbing activities.

5.1.4 Special-Status and Day-Roosting Bats

The riparian vegetation found along the western margins of Site A and Site B supports potential roosting habitat for special-status bat species and other day-roosting bat species. Although bat species were not observed within the BSA, targeted surveys for these species were not conducted. Although the Project may not result in the removal of trees, Project activities could potentially cause indirect impacts, such as disturbance from human encroachment and changes in habitat quality due to alteration of vegetation.

The following sections are general AMMs to minimize potential impacts to special-status bats and day-roosting bats that may potentially occur within the BSA.

5.1.4.1 Pallid Bat and Day-Roosting Bats

Pallid bat and day-roosting bats have the potential to occur within suitable day-roosting habitat within mature trees of the riparian woodland on the eastern boundaries of Site A and Site B (Figure 4-2). Although tree removal is not anticipated for the Project, impacts to pallid bats and day-roosting bats may potentially occur. To ensure that potential impacts are less than significant, the following AMMs are recommended:

- A qualified bat biologist will conduct a bat habitat assessment for suitable bat roosting habitat prior to any construction activities. The habitat assessment should be conducted one year prior to the initiation of construction activities, if feasible, and no less than 30 days prior to the initiation

of construction activities. If no suitable roosting habitat is identified, no further measures are necessary. If suitable roosting habitat and/or signs of bat use are identified during the assessment, the roosting habitat should be avoided to the extent possible.

- If avoidance of the identified bat roosting habitat is not feasible, then a qualified bat biologist will conduct an emergence and/or preconstruction survey for roosting bats. Emergence surveys shall not be conducted during the bat inactive/hibernation period (typically October 15 through March 1, or when nighttime low temperatures are 45 degrees Fahrenheit or lower and rain is not over ½ inch in 24 hours), as bats are not detectable using emergence survey methods during their inactive period. If a maternity roost is located, an avoidance buffer will be established in consultation with CDFW until after the maternity season or until a qualified biologist has determined the roost is no longer active.

5.1.4.2 Western Red Bat

Western red bat has the potential to occur in the tree foliage of mature trees or shrubs within the riparian woodland on the eastern boundaries of Site A and Site B (Figure 4-2). Although tree removal is not anticipated for the Project, impacts to western red bats may potentially occur. To ensure that potential impacts to western red bat are less than significant, the following AMMs are recommended:

- If a qualified bat biologist identified trees or shrubs within the Project Area that may provide suitable day-roosting habitat for western red bat, the roosting habitat should be avoided to the extent possible.
- If avoidance of the identified bat roosting habitat is not feasible, then a qualified bat biologist will conduct an emergence and/or preconstruction survey for roosting bats. Emergence surveys shall not be conducted during the bat inactive/hibernation period (typically October 15 through March 1, or when nighttime low temperatures are 45 degrees Fahrenheit or lower and rain is not over ½ inch in 24 hours), as bats are not detectable using emergence survey methods during their inactive period. If a maternity roost is located, an avoidance buffer will be established in consultation with CDFW until after the maternity season or until a qualified biologist has determined the roost is no longer active.

5.2 CEQA Checklist Criteria IV(b) – Sensitive Natural Communities

Would the Project:

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

The western margins of Site A and Site B consist of a S*alix gooddingii - Salix laevigata* Forest & Woodland Alliance (Figure 4-2). Project activities will occur primarily in the *Avena* spp. – *Bromus* spp. Herbaceous

Semi-Natural Alliance and will not involve the removal of riparian vegetation. Therefore, the Project will not have substantial adverse effects on the riparian community.

5.3 CEQA Checklist Criteria IV(c) – Aquatic Resources

Would the Project:

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?

Aquatic resources have been mapped within the BSA (Figure 4-3); these resources may be subject to the USACE and RWQCB regulation and the Project may have an adverse effect to federally or state regulated aquatic resources. The following mitigation measures are recommended to minimize potential impacts to waters of the U.S. and waters of the State:

- A permit authorization to fill wetlands under the Section 404 of the federal Clean Water Act (Section 404 Permit) must be obtained from USACE prior to discharging any dredged or fill materials into any waters of the U.S. Final mitigation measures will be developed as part of the Section 404 Permit process to ensure no-net-loss of wetland function and values.
- A permit authorization from the RWQCB pursuant to Section 401 of the Clean Water Act and the California Porter-Cologne Water Quality Act must be obtained prior to the discharge of material in an area that could affect waters of the U.S./state. Mitigation requirements for discharge to waters of the U.S./state will be developed in consultation with the RWQCB.

A SAA from CDFW pursuant to Section 1602 of the California Fish and Game Code must be obtained for impacts to features (e.g., the bed, channel, bank, or riparian habitat of any river, stream, or lake) that may be subject to Section 1600 of the Fish and Game Code. Minimization and mitigation measures will be developed during consultation with CDFW as part of the SAA process to ensure that protections for affected fish and wildlife resources are implemented.

5.4 CEQA Checklist Criteria IV(d) – Movement Corridors and Nursery Sites

Would the Project:

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?

Great blue heron rookeries were observed within the Colusa Basin Drainage Canal adjacent to Site A. To ensure that potential impacts to this species are less than significant, the following AMMs are recommended:

- In order to avoid potential impacts to the rookeries, Project activities should work outside the breeding season for great blue heron (February-July). If avoidance is unfeasible, a no-disturbance buffer should be established around the rookeries sites, and CDFW and USFWS should be consulted about implementing appropriate avoidance and minimization measures.
- A monitoring and management plan should be developed in consultation with CDFW, to determine if additional AMMs are required.

5.5 CEQA Checklist Criteria IV(e) – Conflicts with Local Policies or Ordinances

Would the Project:

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

The Yolo County Oak Woodland Conservation and Enhancement Plan does not conflict with Project activities.

5.6 CEQA Checklist Criteria IV(f) – Conflicts with Conservation Plans

Would the Project:

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?

The Project does not conflict with the provisions of an adopted HCP/NCCP, or other approved local, regional, or state habitat conservation plan.

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LIST OF APPENDICES

APPENDIX A

Results of Database Queries

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Eldorado Bend (3812177) OR Kirkville (3812187) OR Zamora (3812178) OR Dunnigan (3812188) OR Sutter Causeway (3812186) OR Knights Landing (3812176) OR Woodland (3812167) OR Grays Bend (3812166) OR Madison (3812168) OR Tisdale Weir (3912117) OR Grimes (3912118) OR Arbuckle (3912211) OR Wildwood School (3812281) OR Bird Valley (3812271))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Acipenser medirostris pop. 1 green sturgeon - southern DPS	AFCAA01031	Threatened	None	G2T1	S1	
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Ambystoma californiense pop. 1 California tiger salamander - central California DPS	AAAAA01181	Threatened	Threatened	G2G3T3	S3	WL
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Ardea alba great egret	ABNGA04040	None	None	G5	S4	
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Astragalus tener var. ferrisiae Ferris' milk-vetch	PDFAB0F8R3	None	None	G2T1	S1	1B.1
Astragalus tener var. tener alkali milk-vetch	PDFAB0F8R1	None	None	G2T1	S1	1B.2
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S2	SSC
Atriplex depressa brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
Atriplex persistens vernal pool smallscale	PDCHE042P0	None	None	G2	S2	1B.2
Bombus crotchii Crotch bumble bee	IIHYM24480	None	Candidate Endangered	G2	S2	
Bombus pensylvanicus American bumble bee	IIHYM24260	None	None	G3G4	S2	
Branta hutchinsii leucopareia cackling (=Aleutian Canada) goose	ABNJB05035	Delisted	None	G5T3	S3	WL
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S4	
Charadrius montanus mountain plover	ABNNB03100	None	None	G3	S2	SSC
Charadrius nivosus nivosus western snowy plover	ABNNB03031	Threatened	None	G3T3	S3	SSC
Chloropyron palmatum palmate-bracted bird's-beak	PDSCR0J0J0	Endangered	Endangered	G1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Cicindela hirticollis abrupta Sacramento Valley tiger beetle	IICOL02106	None	None	G5TH	SH	
Coastal and Valley Freshwater Marsh Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T3	S3	
Emys marmorata western pond turtle	ARAAD02030	Proposed Threatened	None	G3G4	S3	SSC
Extriplex joaquinana San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
Falco columbarius merlin	ABNKD06030	None	None	G5	S3S4	WL
Great Valley Cottonwood Riparian Forest Great Valley Cottonwood Riparian Forest	CTT61410CA	None	None	G2	S2.1	
Great Valley Mixed Riparian Forest Great Valley Mixed Riparian Forest	CTT61420CA	None	None	G2	S2.2	
Great Valley Willow Scrub Great Valley Willow Scrub	CTT63410CA	None	None	G3	S3.2	
Hibiscus lasiocarpos var. occidentalis woolly rose-mallow	PDMAL0H0R3	None	None	G5T3	S3	1B.2
Lasionycteris noctivagans silver-haired bat	AMACC02010	None	None	G3G4	S3S4	
Lasiurus cinereus hoary bat	AMACC05032	None	None	G3G4	S4	
Lasiurus frantzii western red bat	AMACC05080	None	None	G4	S3	SSC
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Layia septentrionalis Colusa layia	PDAST5N0F0	None	None	G2	S2	1B.2
Lepidium latipes var. heckardii Heckard's pepper-grass	PDBRA1M0K1	None	None	G4T1	S1	1B.2
Lepidurus packardi vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G3	S3	
Melospiza melodia pop. 1 song sparrow ("Modesto" population)	ABPBXA3013	None	None	G5T3?Q	S3?	SSC
Navarretia leucocephala ssp. bakeri Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
Nycticorax nycticorax black-crowned night heron	ABNGA11010	None	None	G5	S4	

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Oncorhynchus mykiss irideus pop. 11 steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
Oncorhynchus tshawytscha pop. 11 chinook salmon - Central Valley spring-run ESU	AFCHA0205L	Threatened	Threatened	G5T2Q	S2	
Plegadis chihi white-faced ibis	ABNGE02020	None	None	G5	S3S4	WL
Pogonichthys macrolepidotus Sacramento splittail	AFCJB34020	None	None	G3	S3	SSC
Puccinellia simplex California alkali grass	PMPOA53110	None	None	G2	S2	1B.2
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S3	
Sidalcea keckii Keck's checkerbloom	PDMAL110D0	Endangered	None	G2	S2	1B.1
Spea hammondii western spadefoot	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC
Spirinchus thaleichthys longfin smelt	AFCHB03010	Proposed Endangered	Threatened	G5	S1	
Symphyotrichum lentum Suisun Marsh aster	PDASTE8470	None	None	G2	S2	1B.2
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thaleichthys pacificus eulachon	AFCHB04010	Threatened	None	G5	S1	
Thamnophis gigas giant gartersnake	ARADB36150	Threatened	Threatened	G2	S2	
Trichocoronis wrightii var. wrightii Wright's trichocoronis	PDAST9F031	None	None	G4T3	S1	2B.1
Trifolium hydrophilum saline clover	PDFAB400R5	None	None	G2	S2	1B.2
Valley Oak Woodland Valley Oak Woodland	CTT71130CA	None	None	G3	S2.1	

Record Count: 55

CALIFORNIA NATIVE PLANT SOCIETY

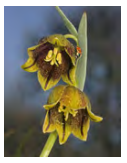
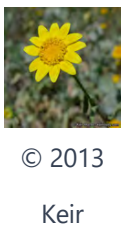
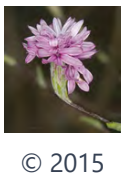
CNPS Rare Plant Inventory

Search Results

22 matches found. Click on scientific name for details

Search Criteria: Quad is one of
[**3812177:3812187:3812178:3812188:3812186:3812176:3812167:3812166:3812168:3912117:3912118:3912211:3812281:3812271**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Astragalus pauperculus	depauperate milk-vetch	Fabaceae	annual herb	Mar-Jun	None	None	G4	S4	4.3	Yes	1974-01-01	 ©2012 Tim Kellison
Astragalus tener var. *ferrisiae*	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	None	None	G2T1	S1	1B.1	Yes	1994-01-01	No Photo Available
Astragalus tener var. *tener*	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	None	None	G2T1	S1	1B.2	Yes	1994-01-01	No Photo Available
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G2	S2	1B.2	Yes	1994-01-01	 © 2009 Zoya Akulova
Atriplex persistens	vernal pool smallscale	Chenopodiaceae	annual herb	Jun-Oct	None	None	G2	S2	1B.2	Yes	2001-01-01	No Photo Available
Centromadia parryi ssp. *rudis*	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	None	None	G3T3	S3	4.2	Yes	2007-05-22	 © 2019 John Doyen
Chloropyron palmatum	palmate-bracted bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct	FE	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G2	S2	1B.2	Yes	1988-01-01	No Photo Available

Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	None	None	G3	S3	4.2	Yes	1980-01-01	 © 2016 Aaron Schusteff
Hibiscus lasiocarpos var. *occidentalis*	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	None	None	G5T3	S3	1B.2	Yes	1974-01-01	 © 2020 Steven Perry
Lasthenia ferrisiae	Ferris' goldfields	Asteraceae	annual herb	Feb-May	None	None	G3	S3	4.2	Yes	2001-01-01	 © 2009 Zoya Akulova
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	None	None	G4T2	S2	1B.1		1994-01-01	 © 2013 Keir Morse
Layia septentrionalis	Colusa layia	Asteraceae	annual herb	Apr-May	None	None	G2	S2	1B.2	Yes	1994-01-01	 © 2013 Jake Ruygt
Lepidium latipes var. *heckardii*	Heckard's pepper-grass	Brassicaceae	annual herb	Mar-May	None	None	G4T1	S1	1B.2	Yes	1994-01-01	 2018 Jennifer Buck
Lessingia hololeuca	woolly-headed lessingia	Asteraceae	annual herb	Jun-Oct	None	None	G2G3	S2S3	3	Yes	1994-01-01	 © 2015 Aaron Schusteff
Navarretia cotulifolia	cotula navarretia	Polemoniaceae	annual herb	May-Jun	None	None	G4	S4	4.2	Yes	2001-01-01	 © 2020 Zoya Akulova
Navarretia leucocephala ssp. *bakeri*	Baker's navarretia	Polemoniaceae	annual herb	Apr-Jul	None	None	G4T2	S2	1B.1	Yes	1994-01-01	 © 2018 Barry Rice
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	None	None	G2	S2	1B.2		2015-10-15	 © 2017 Chris Winchell

Sidalcea keckii	Keck's checkerbloom	Malvaceae	annual herb	Apr-May(Jun)	FE	None	G2	S2	1B.1	Yes	1974-01-01	No Photo Available
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	None	None	G2	S2	1B.2	Yes	1974-01-01	No Photo Available
Trichocoronis wrightii var. *wrightii*	Wright's trichocoronis	Asteraceae	annual herb	May-Sep	None	None	G4T3	S1	2B.1		1988-01-01	No Photo Available
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.2	Yes	2001-01-01	 © 2005 Dean Wm Taylor

Showing 1 to 22 of 22 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2024. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 20 February 2024].

EFH Mapper Report

EFH Data Notice

Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional fishery management councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

West Coast Regional Office

Query Results

Degrees, Minutes, Seconds: Latitude = 38º 52' 57" N, Longitude = 122º 5' 51" W
Decimal Degrees: Latitude = 38.883, Longitude = -121.903

The query location intersects with spatial data representing EFH and/or HAPCs for the following species/management units.

EFH

No additional Essential Fish Habitats (EFH) were identified at the report location.

Pacific Salmon EFH

Link	HUC Name	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
	Sacramento-Stone Corral	Chinook Salmon	All	Pacific	Pacific Coast Salmon Plan

Atlantic Salmon

No Atlantic Salmon were identified at the report location.

HAPCs

No Habitat Areas of Particular Concern (HAPC) were identified at the report location.

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.
****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**

Pacific Coastal Pelagic Species,
Jack Mackerel,
Pacific (Chub) Mackerel,
Pacific Sardine,
Northern Anchovy - Central Subpopulation,
Northern Anchovy - Northern Subpopulation,
Pacific Highly Migratory Species,
Bigeye Thresher Shark - North Pacific,

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.
****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**

Bluefin Tuna - Pacific,
Dolphinfish (Dorado or Mahimahi) - Pacific,
Pelagic Thresher Shark - North Pacific,
Swordfish - North Pacific

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

IPaC resource list

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

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

Location

Colusa and Yolo counties, California

Local office

Sacramento Fish And Wildlife Office

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

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

Endangered species

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

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

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

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

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

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

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

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

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

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

Reptiles

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

Amphibians

NAME	STATUS
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened
Western Spadefoot Spea hammondii Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5425	Proposed Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus — Threatened

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.

https://ecos.fws.gov/ecp/species/7850

Crustaceans

NAME	STATUS

Vernal Pool Fairy Shrimp Branchinecta lynchi — Threatened

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.

https://ecos.fws.gov/ecp/species/498

Vernal Pool Tadpole Shrimp Lepidurus packardi — Endangered

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.

https://ecos.fws.gov/ecp/species/2246

Flowering Plants

NAME	STATUS

Palmate-bracted Bird's Beak Cordylanthus palmatus — Endangered

Wherever found

No critical habitat has been designated for this species.

https://ecos.fws.gov/ecp/species/1616

Critical habitats

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

There are no critical habitats at this location.

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

Bald & Golden Eagles

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

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

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

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31

Golden Eagle *Aquila chrysaetos* Breeds Jan 1 to Aug 31

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

Probability of Presence Summary

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

Probability of Presence (■)

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

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

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

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

Breeding Season (■)

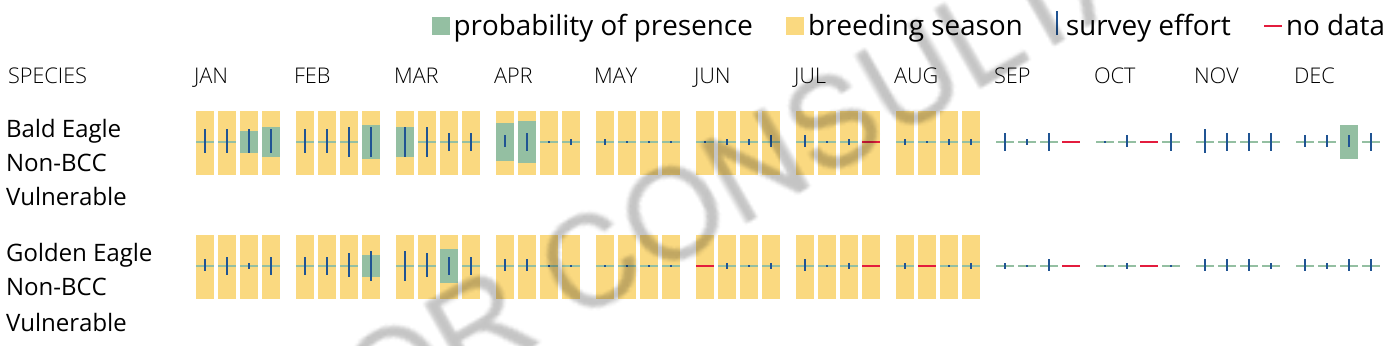
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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

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

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

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



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

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

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

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

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid

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

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

What if I have eagles on my list?

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

Migratory birds

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

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

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

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around

your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

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

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Belding's Savannah Sparrow Passerculus sandwichensis beldingi This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15
Bullock's Oriole Icterus bullockii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Jul 25
California Gull Larus californicus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 1 to Jul 31
Clark's Grebe Aechmophorus clarkii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 31
Common Yellowthroat Geothlypis trichas sinuosa This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31

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

Marbled Godwit Limosa fedoa — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Mountain Plover Charadrius montanus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3638

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

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

Western Grebe aechmophorus occidentalis — Breeds Jun 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/6743

Willet Tringa semipalmata — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Yellow-billed Magpie Pica nuttalli — Breeds Apr 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9726

Probability of Presence Summary

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

Probability of Presence (■)

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

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

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

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

Breeding Season (■)

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

Survey Effort (|)

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

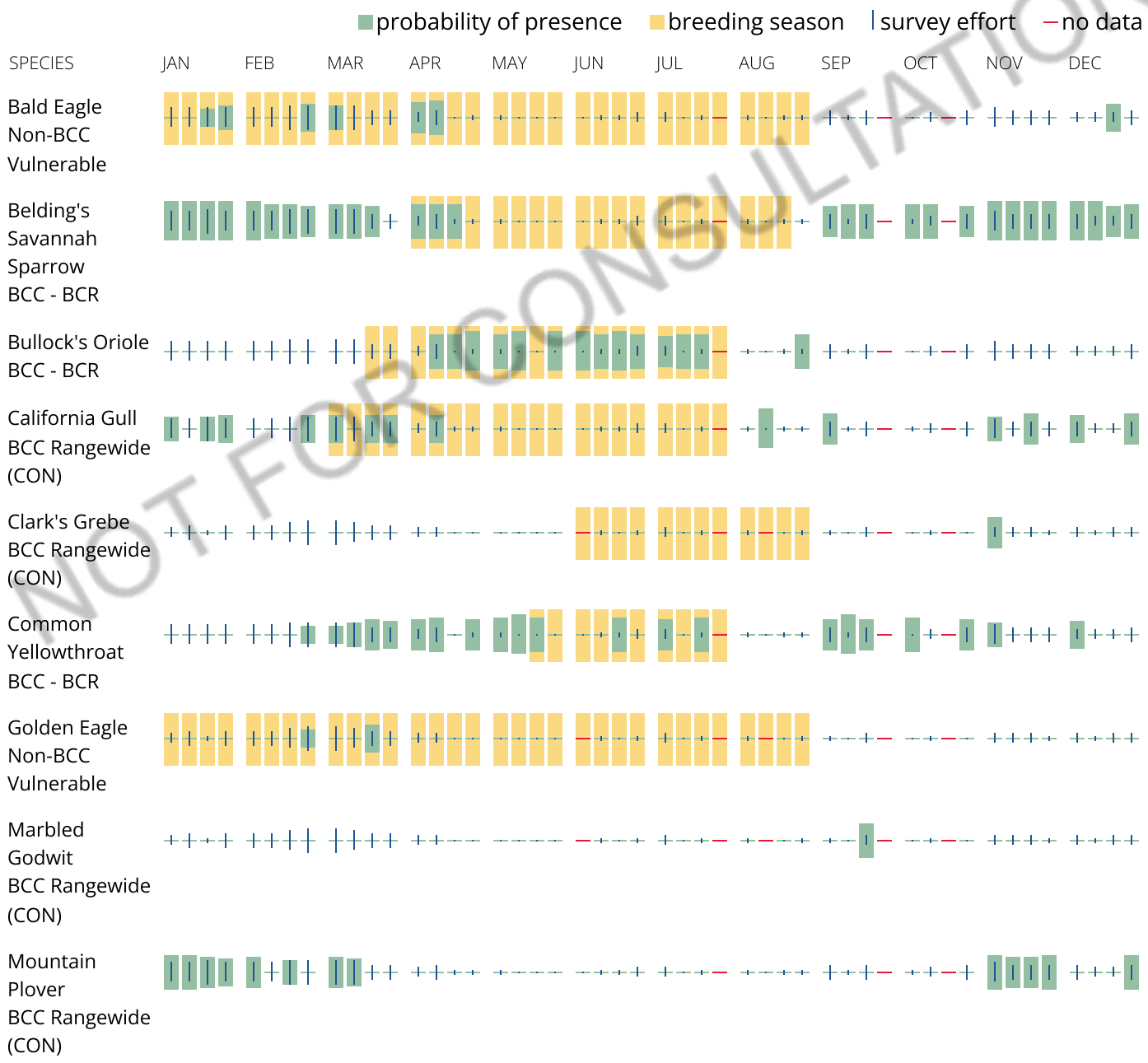
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

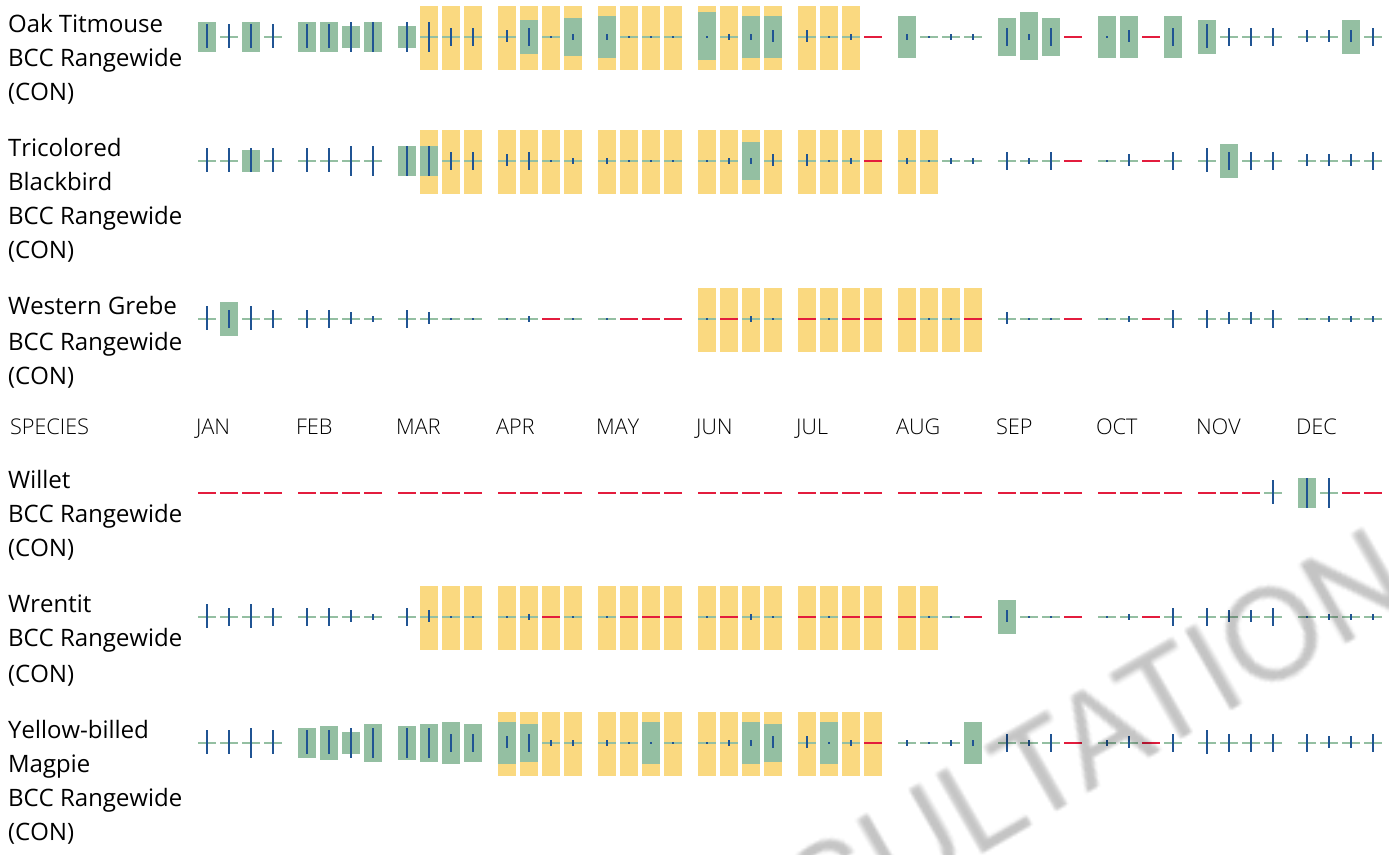
No Data (–)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

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





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

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

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

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

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

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

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

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

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

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

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

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

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

Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

Wildlife refuges and sh hatcheries

Refuge and sh hatchery information is not available at this time

Wetlands in the National Wetlands Inventory (NWI)

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

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

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

PEM1Kx

FRESHWATER FORESTED/SHRUB WETLAND

PFOKx

FRESHWATER POND

PUSAx

RIVERINE

R2UBHx
R4SBCx
R5UBFx

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

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

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

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and

nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

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

APPENDIX B

Representative Photographs

Great blue heron rookery observed within the vicinity of Site A of the BSA. Photo taken February 22, 2024

Representative photo of top of levee, facing southeast.. Photo taken February 22, 2024.

Representative photo of Colusa Basin Drainage, facing north. Photo taken February 22, 2024.

Representative photo of levee hillslope and ditch of Site A and Site B, facing northeast. Photo taken February 22, 2024.

Representative photo of Site B Spoils, facing north. Photo taken February 29, 2024

Representative photo of ditch in Site B Spoils, facing north. Photo taken February 29, 2024

Representative photo of ditch within Site A and Site B of the BSA, facing southwest. Photo taken February 22, 2024

Representative photo of Colusa Basin Drainage and extent of high water, facing south. Photo taken February 22, 2024.

APPENDIX C

Plant Species Observed

Reclamation District 108 Slope Stability FSRP Sites Project:
Plant Species Observed Onsite (February 22, 2024)

SCIENTIFIC NAME	COMMON NAME	Indicator Status
ASTERACEAE	SUNFLOWER FAMILY	
Artemisia douglasiana	Mugwort	FAC
*Centaurea solstitialis**	Yellow star-thistle	N/L
*Lactuca serriola**	Prickly lettuce	FACU
Matricaria discoidea	Pineapple weed	FACU
BRASSICACEAE	MUSTARD FAMILY	
*Brassica nigra**	Black mustard	N/L
FABACEAE	LEGUME FAMILY	
*Trifolium hirtum**	Rose clover	N/L
*Vicia villosa**	Hairy vetch	N/L
POACEAE	GRASS FAMILY	
*Avena sp.**	Wild oat	-
*Bromus sp.**	Brome	-
*Hordeum murinum**	Foxtail barley	FACU
Stipa pulchra	Purple needle grass	N/L
POLYGONACEAE	BUCKWHEAT FAMILY	
*Rumex sp.**	Dock	-
SALICACEAE	WILLOW FAMILY	
Salix sp.	Willow	-
TYPHACEAE	CATTAIL FAMILY	
Typha sp.	Cattail	OBL

APPENDIX D

Wildlife Species Observed

Common Name	Scientific Name
Birds	
Snow Goose	*Anser caerulescens*
Greater White-fronted Goose	*Anser albifrons*
Canada Goose	*Branta canadensis*
Bufflehead	*Bucephala albeola*
American Coot	*Fulica americana*
Sandhill Crane	*Antigone canadensis*
Great Blue Heron	*Ardea herodias*
Great Egret	*Ardea alba*
Turkey Vulture	*Cathartes aura*
Northern Harrier	*Circus hudsonius*
Cooper's Hawk	*Accipiter cooperii*
Red-tailed Hawk	*Buteo jamaicensis*
Great Horned Owl	*Bubo virginianus*
Belted Kingfisher	*Megaceryle alcyon*
Acorn Woodpecker	*Melanerpes formicivorus*
American Kestrel	*Falco sparverius*
Black Phoebe	*Sayornis nigricans*
Common Raven	*Corvus corax*
Tree Swallow	*Tachycineta bicolor*
Marsh Wren	*Cistothorus palustris*
Bewick's Wren	*Thryomanes bewickii*
European Starling	*Sturnus vulgaris*
House Finch	*Haemorhous mexicanus*
Reptiles	
California Toad	*Anaxyrus boreas halophilus*
American Bullfrog	*Lithobates catesbeianus*
Pacific Chorus Frog	*Pseudacris regilla*

APPENDIX C

Cultural Resource Inventory for the RD 108 Slope Stability FSRP Sites Project

ECORP Consulting, Inc.

June 2024

Report not provided due to Confidentiality

APPENDIX D

Energy Model Data Outputs for the RD 108 Slope Stability FSRP Sites Project

August 2024

Proposed Project
Total Construction-Related and Operational
Gasoline Usage

Table 1. Construction in First Calendar Year			
Action	**Carbon Dioxide Equivalents (CO_2e) in Metric Tons[1]**	**Conversion of Metric Tons to Kilograms[2]**	**Construction Equipment Emission Factor[2]**
Project Construction	270	270,000	10.15
Total Gallons Consumed During First Calendar Year of Construction:			**26,601**

Table 2. Construction in Second Calendar Year			
Action	**Carbon Dioxide Equivalents (CO_2e) in Metric Tons[1]**	**Conversion of Metric Tons to Kilograms[2]**	**Construction Equipment Emission Factor[2]**
Project Construction	039	39,000	10.15
Total Gallons Consumed During Second Calendar Year of Construction:			**3,842**

Sources:

[1]ECORP Consulting. 2024. RD 108 CalEEMod Run.. [2]Climate Registry. 2016. *General Reporting Protocol for the Voluntary Reporting Program version 2.1*.
https://theclimateregistry.org/wp-content/uploads/2023/08/General-Reporting-Protocol-v3.0.pdf

APPENDIX E

Noise Model Data Outputs for the RD 108 Slope Stability FSRP Sites Project

August 2024

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/20/2024
Case Description: Clearing and Grubbing

Description	**Affected Land Use**
Clearing and Grubbing	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**	**Estimated Shielding (dBA)**
Dump Truck	No	40		76.5	7000	0
Dump Truck	No	40		76.5	7000	0
Dump Truck	No	40		76.5	7000	0
Dump Truck	No	40		76.5	7000	0
Dump Truck	No	40		76.5	7000	0
Front End Loader	No	40		79.1	7000	0
Excavator	No	40		80.7	7000	0
Dozer	No	40		81.7	7000	0

Results

Calculated (dBA)

Equipment	***Lmax**	**Leq**
Dump Truck	33.5	29.5
Dump Truck	33.5	29.5
Dump Truck	33.5	29.5
Dump Truck	33.5	29.5
Dump Truck	33.5	29.5
Front End Loader	36.2	32.2

Excavator		37.8	33.8
Dozer		38.7	34.8
	Total	**38.7**	**40.6**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/20/2024
Case Description: Excavation

Description	Affected Land Use
Excavation	Residential

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dump Truck	No	40		76.5	7000	0
Dump Truck	No	40		76.5	7000	0
Dump Truck	No	40		76.5	7000	0
Dump Truck	No	40		76.5	7000	0
Dump Truck	No	40		76.5	7000	0
Front End Loader	No	40		79.1	7000	0
Excavator	No	40		80.7	7000	0
Dozer	No	40		81.7	7000	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Dump Truck	33.5	29.5
Dump Truck	33.5	29.5
Dump Truck	33.5	29.5
Dump Truck	33.5	29.5
Dump Truck	33.5	29.5
Front End Loader	36.2	32.2

Excavator		37.8	33.8
Dozer		38.7	34.8
	Total	**38.7**	**40.6**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/20/2024
Case Description: Placing Fill, Compaction, and Levee Grading

Description	Affected Land Use
Placing Fill, Compaction, and Levee Grading	Residential

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dump Truck	No	40		76.5	7000	0
Dump Truck	No	40		76.5	7000	0
Dump Truck	No	40		76.5	7000	0
Dump Truck	No	40		76.5	7000	0
Dump Truck	No	40		76.5	7000	0
Front End Loader	No	40		79.1	7000	0
Excavator	No	40		80.7	7000	0
Dozer	No	40		81.7	7000	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Dump Truck	33.5	29.5
Dump Truck	33.5	29.5
Dump Truck	33.5	29.5
Dump Truck	33.5	29.5
Dump Truck	33.5	29.5
Front End Loader	36.2	32.2

Excavator		37.8	33.8
Dozer		38.7	34.8
	Total	**38.7**	**40.6**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/20/2024
Case Description: Gravel Access Road Reconstruction

Description	Affected Land Use
Gravel Access Road Reconstruction	Residential

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dump Truck	No	40		76.5	7000	0
Dump Truck	No	40		76.5	7000	0
Dump Truck	No	40		76.5	7000	0
Dump Truck	No	40		76.5	7000	0
Dump Truck	No	40		76.5	7000	0
Front End Loader	No	40		79.1	7000	0
Excavator	No	40		80.7	7000	0
Dozer	No	40		81.7	7000	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Dump Truck	33.5	29.5
Dump Truck	33.5	29.5
Dump Truck	33.5	29.5
Dump Truck	33.5	29.5
Dump Truck	33.5	29.5
Front End Loader	36.2	32.2

Excavator		37.8	33.8
Dozer		38.7	34.8
	Total	**38.7**	**40.6**

*Calculated Lmax is the Loudest value.

APPENDIX F

Yocha Dehe – Treatment Protocol for Handling Human Remains and Cultural Items Affiliated with the Yoche Dehe Wintun Nation

YOCHA DEHE
CULTURAL RESOURCES

Treatment Protocol for Handling Human Remains and Cultural Items Affiliated with the Yocha Dehe Wintun Nation

The purpose of this Protocol is to formalize procedures for the treatment of Native American human remains, grave goods, ceremonial items, and items of cultural patrimony, in the event that any are found in conjunction with development, including archaeological studies, excavation, geotechnical investigations, grading, and any ground disturbing activity. This Protocol also formalizes procedures for Tribal monitoring during archaeological studies, grading, and ground-disturbing activities.

I. Cultural Affiliation

The Yocha Dehe Wintun Nation ("Tribe") traditionally occupied lands in Yolo, Solano, Lake, Colusa and Napa Counties. The Tribe has designated its Cultural Resources Committee ("Committee") to act on the Tribe's behalf with respect to the provisions of this Protocol. Any human remains which are found in conjunction with Projects on lands culturally-affiliated with the Tribe shall be treated in accordance with Section III of this Protocol. Any other cultural resources shall be treated in accordance with Section IV of this Protocol.

II. Inadvertent Discovery of Native American Human Remains

Whenever Native American human remains are found during the course of a Project, the determination of Most Likely Descendant ("MLD") under California Public Resources Code Section 5097.98 will be made by the Native American Heritage Commission ("NAHC") upon notification to the NAHC of the discovery of said remains at a Project site. If the location of the site and the history and prehistory of the area is culturally-affiliated with the Tribe, the NAHC contacts the Tribe; a Tribal member will be designated by the Tribe to consult with the landowner and/or project proponents.

Should the NAHC determine that a member of an Indian tribe other than Yocha Dehe Wintun Nation is the MLD, and the Tribe is in agreement with this determination, the terms of this Protocol relating to the treatment of such Native American human remains shall not be applicable; however, that situation is very unlikely.

III. Treatment of Native American Remains

In the event that Native American human remains are found during development of a Project and the Tribe or a member of the Tribe is determined to be MLD pursuant to Section II of this Protocol, the following provisions shall apply. The Medical Examiner shall immediately be notified, ground disturbing activities in that location shall cease and the Tribe shall be allowed, pursuant to California Public Resources Code Section 5097.98(a), to (1) inspect the site

of the discovery and (2) make determinations as to how the human remains and grave goods should be treated and disposed of with appropriate dignity.

The Tribe shall complete its inspection and make its MLD recommendation within forty-eight (48) hours of getting access to the site. The Tribe shall have the final determination as to the disposition and treatment of human remains and grave goods. Said determination may include avoidance of the human remains, reburial on-site, or reburial on tribal or other lands that will not be disturbed in the future.

The Tribe may wish to rebury said human remains and grave goods or ceremonial and cultural items on or near the site of their discovery, in an area which will not be subject to future disturbances over a prolonged period of time. Reburial of human remains shall be accomplished in compliance with the California Public Resources Code Sections 5097.98(a) and (b).

The term "human remains" encompasses more than human bones because the Tribe's traditions call for the burial of associated cultural items with the deceased (funerary objects), and/or the ceremonial burning of Native American human remains, funerary objects, grave goods and animals. Ashes, soils and other remnants of these burning ceremonies, as well as associated funerary objects and unassociated funerary objects buried with or found near the Native American remains are to be treated in the same manner as bones or bone fragments that remain intact.

IV. Non-Disclosure of Location of Reburials

Unless otherwise required by law, the site of any reburial of Native American human remains shall not be disclosed and will not be governed by public disclosure requirements of the California Public Records Act, Cal. Govt. Code § 6250 et seq. The Medical Examiner shall withhold public disclosure of information related to such reburial pursuant to the specific exemption set forth in California Government Code Section 6254(r). The Tribe will require that the location for reburial is recorded with the California Historic Resources Inventory System ("CHRIS") on a form that is acceptable to the CHRIS center. The Tribe may also suggest that the landowner enter into an agreement regarding the confidentiality of site information that will run with title on the property.

V. Treatment of Cultural Resources

Treatment of all cultural items, including ceremonial items and archeological items will reflect the religious beliefs, customs, and practices of the Tribe. All cultural items, including ceremonial items and archeological items, which may be found at a Project site should be turned over to the Tribe for appropriate treatment, unless otherwise ordered by a court or agency of competent jurisdiction. The Project Proponent should waive any and all claims to ownership of

Tribal ceremonial and cultural items, including archeological items, which may be found on a Project site in favor of the Tribe. If any intermediary, (for example, an archaeologist retained by the Project Proponent) is necessary, said entity or individual shall not possess those items for longer than is reasonably necessary, as determined solely by the Tribe.

VI. Inadvertent Discoveries

If additional significant sites or sites not identified as significant in a Project environmental review process, but later determined to be significant, are located within a Project impact area, such sites will be subjected to further archeological and cultural significance evaluation by the Project Proponent, the Lead Agency, and the Tribe to determine if additional mitigation measures are necessary to treat sites in a culturally appropriate manner consistent with CEQA requirements for mitigation of impacts to cultural resources. If there are human remains present that have been identified as Native American, all work will cease for a period of up to 30 days in accordance with Federal Law.

VIII. Work Statement for Tribal Monitors

The description of work for Tribal monitors of the grading and ground disturbing operations at the development site is attached hereto as Addendum I and incorporated herein by reference.

YOCHA DEHE
CULTURAL RESOURCES

ADDENDUM I

Yocha Dehe Wintun Nation
Tribal Monitors
Description of Work and Treatment Protocol

I. Preferred Treatment

The preferred protocol upon the discovery of Native American human remains is to (1) secure the area, (2) cover any exposed human remains or other cultural items, and (3) avoid further disturbances in the area.

II. Comportment

All parties to the action are strongly advised to treat the remains with appropriate dignity, as provided in Public Resource Code Section 5097.98. We further recommend that all parties to the action treat tribal representatives and the event itself with appropriate respect. For example, jokes and antics pertaining to the remains or other inappropriate behavior are ill advised.

III. Excavation Methods

If, after the Yocha Dehe Tribal representative has been granted access to the site and it is determined that avoidance is not feasible, an examination of the human remains will be conducted to confirm they are human and to determine the position, posture, and orientation of the remains. At this point, we recommend the following procedures:

(A) Tools. All excavation in the vicinity of the human remains will be conducted using fine hand tools and fine brushes to sweep loose dirt free from the exposure.

(B) Extent of Exposure. In order to determine the nature and extent of the grave and its contents, controlled excavation should extend to a full buffer zone around the perimeter of the remains.

(C) Perimeter Balk. To initiate the exposure, a perimeter balk (especially, a shallow trench) should be excavated, representing a reasonable buffer a minimum of 10 cm around the maximum extent of the known skeletal remains, with attention to counter-intuitive discoveries or unanticipated finds relating to this or other remains. The dirt from the perimeter balk should be bucketed, distinctly labeled, and screened for cultural materials.

(D) Exposure Methods. Excavation should then proceed inward from the walls of the balk as well as downward from the surface of the exposure. Loose dirt should be scooped out and brushed off into a dustpan or other collective device. Considerable care should be

given to ensure that human remains are not further impacted by the process of excavation.

(E) Provenience. Buckets, collection bags, notes, and tags should be fully labeled per provenience, and a distinction should be made between samples collected from: (1) **Perimeter Balk** (described above), (2) **Exposure** (dirt removed in exposing the exterior/burial plan and associations, and (3) **Matrix** (dirt from the interstices between bones or associations). Thus, each burial may have three bags, "Burial 1 Perimeter Balk," "Burial 1 Exposure Balk," "Burial 1 Matrix."

Please note the provisions below with respect to handling and conveyance of records and samples.

(F) Records. The following records should be compiled in the field: (1) a detailed scale drawing of the burial, including the provenience of and full for all human remains, associated artifacts, and the configuration of all associated phenomena such as burial pits, evidence for preinterment grave pit burning, soil variability, and intrusive disturbance, (2) complete a formal burial record using the consultants proprietary form or other standard form providing information on site #, unit or other proveniences, level depth, depth and location of the burial from a fixed datum, workers, date(s), artifact list, skeletal inventory, and other pertinent observations, (3) crew chief and worker field notes that may supplement or supercede information contained in the burial recording form, and (4) photographs, including either or standard photography or high-quality (400-500 DPI or 10 MP recommended) digital imaging.

(G) Stipulations for Acquisition and Use of Imagery. Photographs and images may be used only for showing location or configuration of questionable formation or for the position of the skeleton. They are not to be duplicated for publication unless a written release is obtained from the Tribe.

(H) Association. Association between the remains and other cultural materials should be determined in the field in consultation with an authorized Tribal representative, and may be amended per laboratory findings. Records of provenience and sample labels should be adequate to determine association or degree of likelihood of association of human remains and other cultural materials.

(I) Samples. For each burial, all **Perimeter Balk** soil is to be 1/8"-screened. All **Exposure** soil is to be 1/8"-screened, and a minimum of one 5-gallon bucket of excavated but unscreened Exposure soil is to be collected, placed in a plastic garbage bag in the bucket. All **Matrix** soil is to be carefully excavated, screened as appropriate, and then collected in plastic bags placed in 5-gallon buckets.

(J) Human remains are not to be cleaned in the field.

(K) Blessings. Prior to any physical action related to human remains, a designated tribal representative will conduct prayers and blessings over the remains. The archaeological consultant will be responsible for insuring that individuals and tools involved in the action are available for traditional blessings and prayers, as necessary.

IV. Lab Procedures

No laboratory studies are permitted without consultation with the tribe. Lab methods are determined on a project-specific basis in consultation with Yocha Dehe Wintun Nation representatives. The following procedures are recommended:

(A) Responsibility. The primary archaeological consultant will be responsible for insuring that all lab procedures follow stipulations made by the Tribe.

(B) Blessings. Prior to any laboratory activities related to the remains, a designated tribal representative will conduct prayers and blessings over the remains. The archaeological consultant will be responsible for insuring that individuals and tools involved in the action are available for traditional blessings and prayers, as necessary.

(C) Physical Proximity of Associations. To the extent possible, all remains, associations, samples, and original records are to be kept together throughout the laboratory process. In particular, **Matrix** dirt is to be kept in buckets and will accompany the remains to the lab. The primary archaeological consultant will be responsible for copying all field records and images, and insuring that the original notes and records accompany the remains throughout the process.

(*E) Additional Lab Finds*. Laboratory study should be done making every effort to identify unanticipated finds or materials missed in the field, such as objects encased in dirt or human remains misidentified as faunal remains in the field. In the event of discovery of additional remains, materials, and other associations the tribal representatives are to be contacted immediately.

V. Re-internment without Further Disturbance

No laboratory studies are permitted on human remains and funerary objects. The preferred treatment preference for exhumed Native American human remains is reburial in an area not subject to further disturbance. Any objects associated with remains will be reinterred with the remains.

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VI. Curation of Recovered Materials

Should all, or a sample, of any archaeological materials collected during the data recovery activities – with the exception of Human Remains – need to be curated, an inventory and location information of the curation facility shall be given to tribe for our records.