FINAL ◦ OCTOBER 2025

Initial Study/Mitigated Negative Declaration for the Lindsey Slough Levee Rehabilitation Project Unit 1



PREPARED FOR

Reclamation District No. 536
Stockton, CA

PREPARED BY

Stillwater Sciences
279 Cousteau Place, Suite 400
Davis, CA 95618

and

MBK Engineers
455 University Avenue, Suite 100
Sacramento, CA 95825

Stillwater Sciences

Suggested citation:
Stillwater Sciences and MBK Engineers. 2025. Initial Study/Mitigated Negative Declaration for the Lindsey Slough Levee Rehabilitation Project Unit 1. Final. Prepared by Stillwater Sciences, Davis, California, and MBK Engineers, Sacramento, California, for Reclamation District No. 536, Stockton, California.

Cover photo: View of the levee and landside slope, March 5, 2025.

PROJECT SUMMARY

Lindsey Slough Levee Rehabilitation Project Unit 1	
CEQA lead agency name and address	Reclamation District No. 536 P.O. BOX 2382 Stockton Grove, CA 95201
CEQA responsible agency	California Department of Water Resources, funded under the Flood System Repair Program
Contact person and phone number	Michael Kynett District Engineer MBK Engineers 455 University Avenue, Suite 100 Sacramento, CA 95825 kynett@mbkengineers.com Office: (916) 456-4400
Project location	Egbert Tract, Sacramento-San Joaquin Delta, Solano County
Project sponsor's name and address	Cale Crawford, Trustee Reclamation District No. 536 P.O. BOX 2382 Stockton, CA 95201 (916) 441-6850
Zoning	Agriculture
Description of Project	To maintain levee integrity and provide long-term flood protection to Egbert Tract, Reclamation District No. 536 is planning to repair approximately 2,050 linear feet of levee along the right bank of the Lindsey Slough Levee (Unit 1).
Surrounding land uses and setting	The Project will be conducted on the landside of the levee. The land is zoned for agriculture and is adjacent to Lindsey Slough to the north.
Other public agencies whose approval may be required (e.g., participation agreement)	California Central Valley Floor Protection Board

PROPOSED MITIGATED NEGATIVE DECLARATION

Project: Lindsey Slough Levee Rehabilitation Project Unit 1

Lead Agency: Reclamation District No. 536

Project Location: Unit 1 South (right) Bank Lindsey Slough, Egbert Tract, Solano County

Project Description: To maintain levee integrity and provide long-term flood protection to Egbert Tract, Reclamation District No. 536 is proposing to repair approximately 2,050 linear feet of levee along the right bank of the Lindsey Slough Levee (Unit 1).

Findings: An Initial Study has been prepared to assess the potential impacts of the Project on the environment and the significance of those impacts. Based on the Initial Study, Reclamation District No. 536 has determined that the Project, including conservation measures that are part of the Project design and additional mitigation measures, will not have significant impacts on the environment. This conclusion is supported by the following findings:

- The Project will have no impact on agriculture and forestry resources, land use and planning, mineral resources, population and housing, public services, recreation, transportation, and wildfire.
- The Project will result in less-than-significant impacts to aesthetics, air quality, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, noise, and utilities and service systems.
- Mitigation is included to reduce potentially significant impacts to less-than-significant levels for biological resources, cultural resources, and tribal cultural resources.

Mandatory Findings of Significance:

- With incorporation of mitigation measures, the Project will not 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, 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.
- With incorporation of mitigation measures, the Project will not have environmental impacts that are individually limited, but cumulatively considerable.
- With incorporation of mitigation measures, the Project will not have environmental impacts that will substantially and adversely affect human beings, either directly or indirectly.

Proposed Mitigation Measures: Mitigation measures included for the Project to avoid or minimize potential environmental impacts are included in the attached Initial Study, which is hereby incorporated and fully made part of this Mitigated Negative Declaration. Implementation of these mitigation measures will ensure that the potential environmental impacts of the Project are less than significant. Reclamation District No. 536 has agreed to implement each of the identified mitigation measures, which will be adopted as part of the Mitigation Monitoring and Reporting Program.

Determination

In accordance with Section 21082.1 of the California Environmental Quality Act (CEQA), Reclamation District No. 536 has independently reviewed and analyzed the Initial Study and proposed Mitigated Negative Declaration for the Project and finds that the Initial Study and proposed Mitigated Negative Declaration reflect the independent judgment of Reclamation District No. 536. The lead agency further finds that the Project mitigation measures will be implemented as stated in the Initial Study and Mitigated Negative Declaration. This Mitigated Negative Declaration is filed in accordance with CEQA and the state CEQA guidelines.

I hereby approve this Project:

Reclamation District No. 536	10/30/25 Date

Table of Contents

1 INTRODUCTION 1

1.1 Project Purpose 1
1.2 Project Location 1
1.3 Project Area 2
1.4 Project Description 5
1.4.1 Construction 5
1.4.2 Access and staging areas 5
1.4.3 Equipment 5
1.4.4 Schedule 6
1.4.5 Conservation measures 6
1.4.6 Mitigation measures 9

2 ENVIRONMENTAL SETTING AND IMPACTS 13

2.1 Aesthetics 13
2.1.1 Environmental setting 13
2.1.2 Findings 14
2.2 Agriculture and Forestry Resources 15
2.2.1 Environmental setting 15
2.2.2 Findings 16
2.3 Air Quality 17
2.3.1 Environmental setting 17
2.3.2 Findings 19
2.4 Biological Resources 22
2.4.1 Environmental setting 22
2.4.2 Findings 30
2.5 Cultural Resources 33
2.5.1 Environmental setting 33
2.5.2 Findings 34
2.6 Energy 35
2.6.1 Environmental setting 35
2.6.2 Findings 36
2.7 Geology and Soils 36
2.7.1 Environmental setting 37
2.7.2 Findings 38
2.8 Greenhouse Gas Emissions 40
2.8.1 Environmental setting 40
2.8.2 Findings 41
2.9 Hazards and Hazardous Materials 42
2.9.1 Environmental setting 42
2.9.2 Findings 43
2.10 Hydrology and Water Quality 45
2.10.1 Environmental setting 45
2.10.2 Findings 46
2.11 Land Use and Planning 48
2.11.1 Environmental setting 48
2.11.2 Findings 49

2.12 Mineral Resources 49
2.12.1 Environmental setting 49
2.12.2 Findings 49
2.13 Noise 50
2.13.1 Environmental setting 50
2.13.2 Findings 51
2.14 Population and Housing 53
2.14.1 Environmental setting 53
2.14.2 Findings 53
2.15 Public Services 54
2.15.1 Environmental setting 54
2.15.2 Findings 54
2.16 Recreation 55
2.16.1 Environmental setting 55
2.16.2 Findings 55
2.17 Transportation 56
2.17.1 Environmental setting 56
2.17.2 Findings 56
2.18 Tribal Cultural Resources 57
2.18.1 Environmental setting 57
2.18.2 Findings 58
2.19 Utilities and Service Systems 59
2.19.1 Environmental setting 60
2.19.2 Findings 60
2.20 Wildfire 61
2.20.1 Environmental setting 62
2.20.2 Findings 62
2.21 Mandatory Findings of Significance 63

3 DETERMINATION 66

4 LIST OF PREPARERS 67

5 CONSULTATION AND COORDINATION 68

6 COMPLIANCE WITH FEDERAL AND STATE ENVIRONMENTAL LAWS AND REGULATIONS 69

6.1 Federal 69
6.2 State 69

7 REFERENCES 73

Tables

Table 1-1. Equipment list for the Lindsey Slough Levee Rehabilitation Project. 5
Table 2-1. Summary of environmental factors potentially affected by the Project. 13
Table 2-2. Summary air quality statistics for the Sacramento Valley Air Basin, 2018 to 2023. 18
Table 2-3. Project emission sources and quantities used to determine emissions. 20
Table 2-4. Estimated Project construction emissions of criteria pollutants for which the Project region is designated as non-attainment. 20
Table 2-5. Special-status wildlife included for analysis for Project-related impacts. 24
Table 2-6. Vegetation and land cover types within the Project Area. 27
Table 2-7. Expected construction equipment noise levels and usage. 52

Figures

Figure 1-1. Lindsey Slough Levee Rehabilitation Project Area and surrounding vicinity. 3
Figure 1-2. Lindsey Slough Levee Rehabilitation Project Area. 4
Figure 2-1. Vegetation types within the Project Area. 28

Appendices

Appendix A California Emissions Estimator Model Data Entry and Emissions Summary Sheets
Appendix B Database Query Results for Special-status Plant Species and Sensitive Natural Communities in the Lindsey Slough Levee Rehabilitation Project Region
Appendix C Database Query Results for Special-status Wildlife Species and Sensitive Natural Communities in the Lindsey Slough Levee Rehabilitation Project Region
Appendix D Comprehensive List of Plant Species Documented during Special-status Plant Surveys for the Lindsey Slough Levee Rehabilitation Project
Appendix E Public Comments and Responses on the Draft IS/MND for the Lindsey Slough Levee Rehabilitation Project
Appendix F Lindsey Slough Levee Rehabilitation Project Mitigation Monitoring and Reporting Program

Acronyms

$\mu g/m^3$	microgram per cubic meter
AB	Assembly Bill
ALZ	Assault Landing Zone
APE	Area of Potential Effects
Basin Plan	Water Quality Control Plan for the Central Valley Region
BMP	best management practice
CalEEMod	California Emissions Estimator Model
CalFire	California Department of Forestry and Fire Protection
Cal-IPC	California Invasive Plant Council
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHRIS	California Historical Resources Information System

CNDDB	California Natural Diversity Database
CRHR	California Register of Historical Resources
dB	decibel
dBA	A-weighted decibel
Delta	Sacramento-San Joaquin Delta
District	Reclamation District No. 536
DWR	California Department of Water Resources
ESA	Endangered Species Act
FMMP	Farmland Mapping and Monitoring Program
FSRP	Flood System Repair Program
ft	feet
GHG	greenhouse gas
IS/MND	Initial Study/Mitigated Negative Declaration
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendant
MMTCO2e	million metric tons of carbon dioxide equivalent
NAHC	Native American Heritage Commission
Natural Investigations	Natural Investigations, Inc.
NOI	Notice of Intent
NPPA	Native Plant Protection Act
PM_{10}	respirable particulate matter with a diameter of 10 microns or less
$PM_{2.5}$	respirable particulate matter with a diameter of 2.5 microns or less
Project	Lindsey Slough Levee Rehabilitation Project
RWQCB	Regional Water Quality Control Board
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VdB	vibration decibels
YSAQMD	Yolo-Solano Air Quality Management District

1 INTRODUCTION

Reclamation District No. 536 (District) is planning to repair approximately 2,050 linear feet (ft) of levee at the northeast corner of the District, along the right bank of Lindsey Slough Levee (Unit 1) to maintain levee integrity and provide long-term flood protection to Egbert Tract by excavating and recompacting the landside levee slope. This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared in compliance with the California Environmental Quality Act (CEQA) to address the potential environmental impacts of the Lindsey Slough Levee Rehabilitation Project Unit 1 (Project). The Project is funded under the California Department of Water Resources' (DWR) as well as other funding sources.

1.1 Project Purpose

The Lindsey Slough levee has a history of cracking and settling, which are common issues among bypass levees due to foundation soils and the historical methods used for construction. The District seasonally monitors levee cracking and settling for any significant changes that tend to occur during wet weather, high water, or drought.

In 2021, the District observed significant cracking and settling of the levee crest and slope between approximately Station 280+50 to Station 289+00 (Levee Mile 5.31 and 5.47). MBK Engineers, along with DWR performed several subsequent site visits to further evaluate the condition of the levee, ultimately determining that the landside levee slope is in a failed state. Progressive landside levee slips indicate that a portion of the levee slope is moving and will continue to do so, especially with changes in moisture conditions or high water. In 2022, the District performed an emergency repair of this area, including excavating ~~a keyway along the landside toe, trenching and recompacting cracks along the levee crest, and placing compacted aggregate base on the levee crest.~~

~~Since 2022, the District has reported sinkholes and cracking in the levee~~ crest between Station 273+50 and 280+50 which have required routine backfilling. In 2024, the District trenched several of the sinkholes in the levee crest and found poorly compacted materials, cracks, and holes in the levee embankment. A review of the District's files indicated that this section of levee has documented poor performance associated with levee cracking and slope movement.

MBK Engineers and Shannon & Wilson Inc. performed an initial site assessment, reviewed historical performance issues, and conducted a geotechnical analysis, all of which indicate that landside slope integrity remains a significant concern for the levee between Station 273+50 and 294+00. Several alternatives to address the integrity issues exist and include excavating and replacing levee embankment material, landside slope flattening, or constructing a landside stability berm.

1.2 Project Location

Egbert Tract is in the Sacramento-San Joaquin Delta (Delta) about 6 miles northwest of the community of Rio Vista in Solano County, California (Figure 1-1). The levee system is part of the U.S. Army Corps of Engineers' (USACE) Sacramento River Flood Control Project and the California State Plan of Flood Control, forming a portion of the Yolo Bypass. Surrounding areas include Little Egbert Tract to the east, Hastings Island to north, and rural agricultural areas to the west and south. Egbert Tract is accessible from the north via Hastings Island Road, from the

south via Liberty Island Road, and from the west via Robinson Road. Liberty Island Road spans the northeastern portion of the Unit 1 levee and provides access to the Project Area (see Section 1.3).

1.3 Project Area

The Project Area is on the northeast side of Egbert Tract and includes approximately 2,050 linear feet of levee along the right bank of Lindsey Slough between Stations 273+50 and 294+00 (Figure 1-1). The Project Area includes the crown of the levee, a portion of Liberty Island Road, the landside slope, and a road at the toe of the levee, which will be used for access and staging (Figure 1-2). The Project is anticipated to be completed in multiple Phases. Phase I consists of the repairs to the levee between Station 280+50 and Station 289+00 while Phase II consists of repairs to the levee between Station 273+50 and 280+50 as well as Station 289+00 to 294+00. Phase I and Phase II will be performed over separate construction seasons.

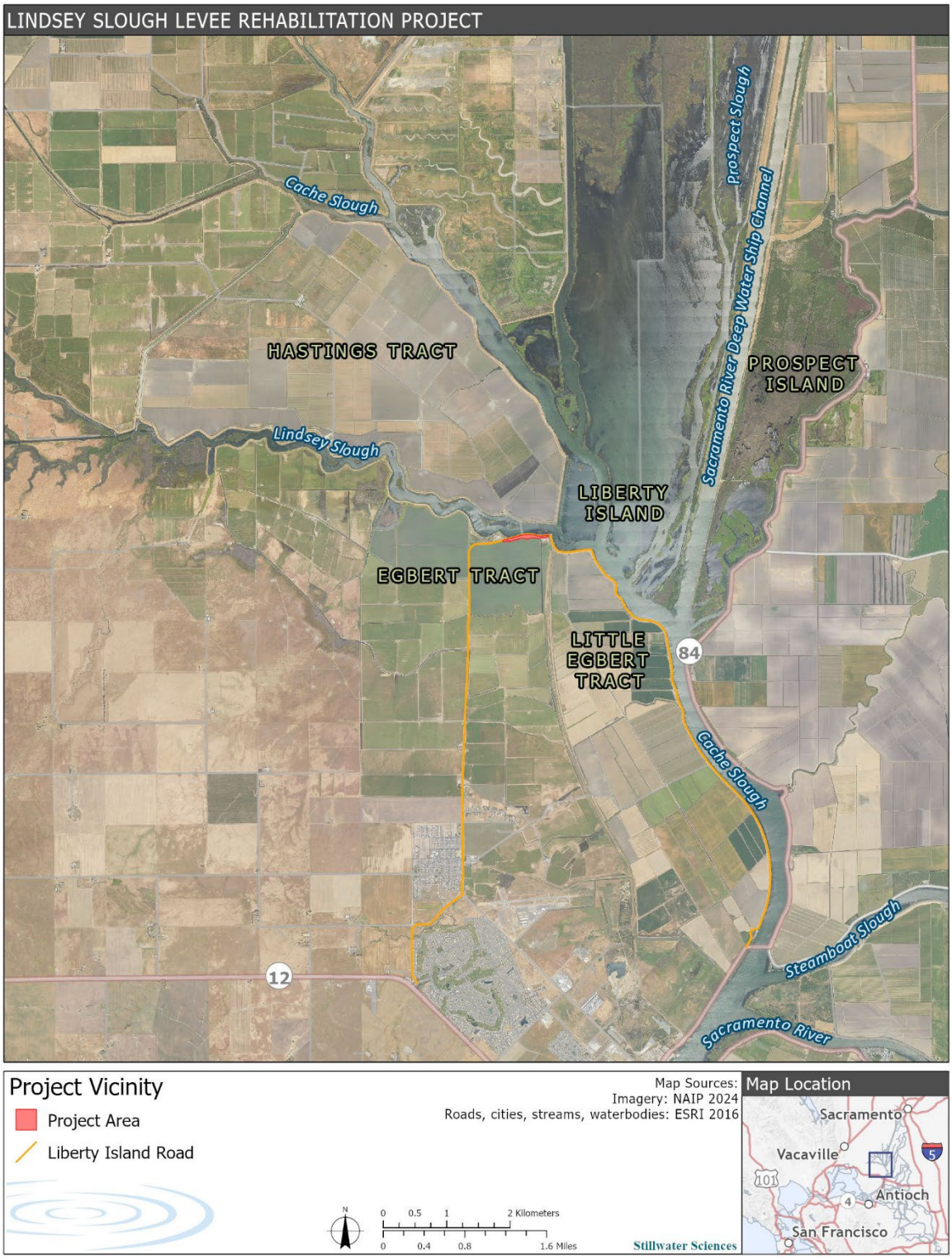


Figure 1-1. Lindsey Slough Levee Rehabilitation Project Area and surrounding vicinity.



Figure 1-2. Lindsey Slough Levee Rehabilitation Project Area.

1.4 Project Description

1.4.1 Construction

1.4.1.1 Site preparation

Site preparation activities will include stripping, clearing, and grubbing upland vegetation within the construction footprint. Trees within the limits of grading will be removed. Prior to fill placement, a portion of the existing landside levee embankment will be excavated by cutting 25 ft laterally from the existing levee toe to remove and recompact the historical levee fill material composed of poorly compacted low-quality fill materials. The degraded levee and roadway material will be temporarily stockpiled on site for reuse during levee reconstruction.

1.4.1.2 Levee embankment construction

The levee embankment will be reconstructed to a finish grade of 4:1 (horizontal:vertical) by placing and compacting a mix of stockpiled and imported levee fill material. The reconstructed levee will match the existing levee crest width and elevation. Embankment fill will be compacted with heavy equipment (e.g., bulldozer, excavators). The levee crest access road will be reconstructed by compacting aggregate base materials to restore it to its pre-Project condition. The landside levee toe road will be realigned and reconstructed using fill material. Disturbed areas on the landside levee slope will be hydroseeded with native grasses.

1.4.2 Access and staging areas

Access for construction within the Project Area will be along established roads, primarily through a District gate at the northern terminus of Liberty Island Road. Construction on the levee slope will be performed by equipment from the levee crest or levee toe. Large construction equipment and contractor facilities will be staged within the Project Area along the landside levee toe and crest. Construction materials, portable equipment, supplies, and chemicals will be stockpiled in restricted areas along an existing gravel road on the levee crest.

1.4.3 Equipment

Table 1-1 provides a list of equipment expected to be used during Project implementation.

Table 1-1. Equipment list for the Lindsey Slough Levee Rehabilitation Project.

Equipment type	Number of rigs (or trips, if specified)	Phase I Estimated hours (or total trips, if specified)	Phase II Estimated hours (or total trips, if specified)
Dozer, CAT D6	1	152	232
Excavator, CAT 330	1	128	240
Compactor, CAT CS5	1	152	200
Motor grader, CAT 140L	1	56	56
Scraper, CAT 621	1	144	320
Backhoe, CAT 416	1	112	112
Water truck	1	152	240
Haul trucks (import)	~40–60 trips per day[1]	750 total trips	1,200 total trips
Foreman/super pickup, F350	2	368	544

[1] ~40–60 trips per day are estimated on subset of days when hauling will take place.

1.4.4 Schedule

The Project is expected to occur in two phases separated over two construction seasons. Phase I construction is expected to take 3 to 4 weeks while Phase II is expected to take 6 to 8 weeks. The construction season is expected to be between May 1 and November 1. A typical workday is assumed to begin at 7:00 a.m. and end at 7:00 p.m. from Monday through Saturday, with minor maintenance occurring between 9:00 a.m. and 4:00 p.m. on Sunday. Construction work will not begin prior to 7:00 a.m. or extend after 7:00 p.m.

1.4.5 Conservation measures

The conservation measures described below will be implemented as part of the Project. The measures are based on standard practices to avoid, minimize, or reduce potential impacts to environmental resources and to comply with existing regulations and/or requirements pertaining to air quality, biological resources, energy, greenhouse gas (GHG) emissions, hazards/hazardous materials, and hydrology/water quality.

CM-1. The following best management practices (BMPs) will be implemented during Project construction to prevent, control, and minimize emissions:

a) All diesel-fueled construction equipment will be in compliance with the California Air Resources Board's (CARB's) In-Use Off-Road Diesel-Fueled Fleets Regulation.
b) All construction equipment will be properly tuned and maintained prior to and for the duration of on-site operation.
c) Diesel-powered construction equipment idling time will be minimized to the extent feasible.
d) Water will be applied as needed to control dust and to prevent visible emissions violations and off-site dust impacts.
e) Traffic speeds on all unpaved surfaces will be limited to 20 miles per hour or less.
f) Ground cover will be re-established within the Project Area as soon as possible after construction.

CM-2. Prior to beginning Project activities each day or before moving vehicles or equipment, staging areas and areas under and around vehicles and equipment will be scanned for wildlife. If any wildlife is observed in the Project footprint, activities within the immediate vicinity will cease and the animal will be allowed to move out of the area on its own.

CM-3. Prior to Project construction, a Stormwater Pollution Prevention Plan (SWPPP) that will include, but not be limited to, the following BMPs to avoid and minimize potential impacts to water quality in surrounding waterways from erosion will be developed:

a) Construction will occur only during dry periods that are defined as (1) less than 0.25 inch of precipitation during the preceding 24 hours, and (2) no precipitation falling during active construction.
b) Prior to storm events, all construction activities will cease, and appropriate erosion control measures will be implemented.
c) Soil, silt, or other organic materials will not be placed, stockpiled, or stored where such materials could pass into surface water or surface water drainage courses during unexpected rain events.
d) All areas disturbed by Project activities will be protected from washout or erosion prior to the onset of the rainy season.

e) All temporarily affected areas will be restored to preconstruction contours and conditions upon completion of construction activities. Any areas with bare ground will be re-seeded with a native seed mix.

f) Prior to initiation of work, erosion control measures will be used throughout all phases of operation where silt and/or earthen fill have the potential to enter Waters of the United States and/or State.

CM-4. The Project SWPPP will include, but not be limited to, the following BMPs to avoid and minimize potential impacts from hazards and hazardous materials:

a) No potentially hazardous materials will be stored in a location where there is potential for them to enter any waterway and/or contaminate aquatic resources.

b) All construction materials with the potential to pollute runoff will be handled with care and stored under cover or surrounded by berms during wet weather or when rain is forecast.

c) An effort will be made to store only the amount of a potentially hazardous product necessary to complete the job.

d) Materials, fuels, liquids and lubricants, and equipment supplies stored on site will be kept in a neat, orderly manner, in appropriate containers, with the original manufacturer's label, and, if possible, in an enclosure.

e) Any hazardous materials will be stored and labeled according to local, state, and federal regulations.

f) If drums must be stored without overhead cover, they will be stored at a slight angle to reduce corrosion and ponding of rainwater on the lids.

g) Substances will not be mixed with one another unless recommended by the manufacturer.

h) Manufacturer's recommendations for proper use and disposal of a product will be followed.

i) Whenever possible, all of a product will be used before disposal of its container.

j) If surplus product must be disposed of, the manufacturer's or the local and state recommended methods for proper disposal will be followed.

CM-5. The SWPPP developed for the Project will include, but not be limited to, the following measures to prevent, control, and minimize impacts from a spill of a hazardous, toxic, or petroleum substance during construction of the Project:

a) Minor spills are those that can be controlled by on-site personnel. The following actions will occur upon discovery of a minor spill:
   - The spread of the spill will be contained.
   - If the spill occurs on impermeable surfaces, such as any temporary surfaces installed for pollution prevention during construction, it will be cleaned up using "dry" methods (e.g., absorbent materials, cat litter, rags).
   - If the spill occurs in permeable substrate areas, it will be immediately contained by constructing an earthen dike. The contaminated soil will be excavated and properly disposed of.
   - If the spill occurs during rain, the impacted area will be covered to avoid runoff, and appropriate cleanup steps will be taken after precipitation has ceased.
   - All steps taken to report and contain the spill will be recorded.

b) On-site personnel should not attempt to control major spills until the appropriate and qualified emergency response staff has arrived at the site. Failure to report major spills can result in significant fines and penalties.

- If a major spill occurs, the Governor's Office of Emergency Services Warning Center will be notified at (800) 852-7550 along with local authorities.
- For spills of federal reportable quantities, the National Response Center will also be notified at (800) 424-8802. The federal reportable spill quantity for petroleum products is any oil spill that (1) violates applicable water quality standards, (2) causes a film or sheen upon or discoloration of a water surface or adjoining shoreline, or (3) causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines.
- A written report will be sent to all notified authorities.

c) Diesel fuel, oil, gasoline, and lubricants are considered petroleum products. These materials will be handled carefully to minimize their exposure to storm water. The risks in using petroleum products will be reduced by following these steps:
   - Waste oil and other petroleum products will not be discharged into the ground or any water bodies.
   - Petroleum products will be stored in tightly sealed containers that are clearly labeled, in a covered area, and in an upland area or within prefabricated spill containment devices, earthen berms, or similar secondary containment features.
   - On-site vehicles will be monitored daily for fluid leaks and receive regular preventative maintenance to reduce the chance of leakage (e.g., check for and fix fuel oil leaks in construction vehicles on a regular basis). Oil, grease, or other fluids will be washed off at designated wash stations prior to entering the Project Area.
   - Bulk fuel or lubricating oil dispensers will have a valve that must be held open to allow the flow of fuel into construction vehicles. During fueling operations, the contractor will have personnel present to detect and contain spills.

d) The following additional spill control and cleanup practices will be followed:
   - Spills will be contained and cleaned up immediately after discovery.
   - Manufacturer's methods for spill cleanup of a material will be followed as described on the material safety data sheets (kept with product containers).
   - Materials and equipment needed for cleanup procedures will be kept readily available on site, either at an equipment storage facility or on the contractor’s trucks. Equipment to be kept on site will include, but not be limited to, brooms, dust pans, shovels, granular absorbents, sand, sawdust, absorbent pads and booms, plastic and metal trash containers, gloves, and goggles.
   - On-site personnel will be made aware of clean-up procedures, the location of spill cleanup equipment, and proper disposal procedures.
   - Toxic, hazardous, or petroleum product spills required to be reported by regulations will be documented and a record of the spills will be kept with Project documents.

If a spill occurs that is reportable to the federal, state, or local agencies, the contractor will be responsible for making and recording the reports.

CM-6. The following measures will be implemented to reduce the potential for fire:

a) Smoking will be permitted only in designated smoking areas.
b) Every fuel truck will carry a large fire extinguisher with a minimum rating of 40 B:C.
c) All flammable materials will be removed from equipment parking and storage areas.

CM-7. Construction activities associated with the Project may exceed the Solano County noise limit of 65 dBA at the nearest property line, as outlined in Solano County Code § 28.70.10; however, the neighboring property owners are the same entity that owns the Project Area and/or supportive of the Project. To reduce noise impacts to the nearby noise-sensitive receptors, work expected to exceed this threshold will be restricted to daytime hours (7:00 a.m. to 7:00 p.m.).

1.4.6 Mitigation measures

Mitigation measures have been added to the Project to reduce potential impacts to biological and cultural resources to a less-than-significant level.

MM-1 Tree removal will be mitigated at a 1:1 ratio for non-native species and a 2:1 ratio for native species by replanting on-site or off-site or purchasing credits from a relevant mitigation bank.

MM-2. Prior to construction, special-status plant surveys will be conducted throughout the Project Area in accordance with *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants* (USFWS 2000) and *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018). Areas with special-status plants will be flagged or otherwise marked (e.g., staked, fenced) for avoidance, including a 10-ft-radius buffer. If work must be conducted within the 10-ft buffer, hand tools will be used to the extent possible. A biological monitor will be present during construction activities in areas within a 10-ft buffer of special-status plants to ensure impacts are avoided.

MM-3. All contractors and equipment operators will be provided with Worker Environmental Awareness Program training about the environmental resources of the Project Area, including special-status plants, fish, and wildlife species with potential to occur within the Project Area, and required protection measures. Workers will be informed about the presence, life history, and habitat requirements of all special-status species that may be affected by Project activities. Training will also include information on state and federal laws protecting plants, wildlife, fish, nesting birds, cultural resources, and water quality and the consequences of noncompliance with these laws. This training will be conducted prior to construction activities or to any new staff/contractors added during the Project.

MM-4. A preconstruction survey for northwestern pond turtles (*Actinemys marmorata*) and active breeding locations (i.e., nests), as relevant, will be conducted in suitable habitat within the Project footprint and surrounding 300 ft no earlier than 7 days prior to initiation of activities. If an active northwestern pond turtle nest (nesting season is typically May through July) is discovered, the area will be noted, and a no-disturbance buffer will be established and flagged. The recommended no-disturbance buffer is 100 ft; however, the buffer will be determined by the biologist (and if needed, in consultation with the California Department of Fish and Wildlife (CDFW) based on environmental conditions and activities being conducted nearby. No Project activities will occur within the no-disturbance buffer zone until the biologist has determined that the nest is no longer in use. If deemed appropriate by the biologist, exclusion fencing may be incorporated. If northwestern pond turtle is observed at any time during construction, it will be allowed to leave the area on its own or may be relocated by a biologist to a suitable habitat outside the Project footprint.

MM-5. The following measures will be implemented to minimize potential impacts to giant garter snake or its habitat. These measures are based on the U.S. Fish and Wildlife Service's (USFWS's) *Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake Habitat, from Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Projects with Relatively Small Effects on the Giant Garter Snake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter and Yolo Counties, California* (USFWS 1997), as well as on recommendations from CDFW.

a) Initial site preparation and initial ground-disturbing activities within 200 ft of suitable giant garter snake habitat will occur between May 1 and October 1; this is the active period for the snake, lessening the potential for direct mortality. Ground-disturbing work initiated prior to October 1 may continue into the snake's inactive season.
b) No more than 30 days prior to ground-disturbing activities, a biologist with giant garter snake experience will survey the work area and a minimum 50-ft radius (of the work area) for the snake or burrows and crevices in which giant garter snake could be present. Potentially suitable burrows and crevices will be flagged and avoided by establishing a minimum 50-ft no-disturbance buffer.
c) If a giant garter snake is discovered at any time within the Project Area, including staging locations, all Project activities will halt until USFWS and CDFW have been notified and given the opportunity to provide additional giant garter snake protection measures.
d) The use of erosion control materials potentially harmful to giant garter snake, such as mono-filament netting, will be prohibited; alternatively, tightly woven fiber netting or similar material will be used to ensure that giant garter snakes do not get trapped or become entangled.

MM-6. A biologist will conduct a habitat assessment for special-status bats or signs of their presence (e.g., guano, urine staining) within the Project Area prior to any tree or structure removal to identify areas of suitable bat habitat (e.g., cracks or crevices in structures; large cavities, basal hollows, or crevices in trees; exfoliating tree bark or deep bark fissures). If suitable habitat is identified, a biologist may perform emergence or acoustic surveys. The following measures will be implemented if active bat roosts are identified or emergence or acoustic surveys are not performed (in which case presence will be assumed). These measures do not apply if emergence or acoustic surveys determine suitable habitat is not occupied:

a) Tree or structure removal will occur between August 16 and October 31. This time frame avoids the approximate periods of maternal roosting (April 15 to August 15) and winter torpor (October 31 to March 31).
b) Trees will be disturbed only when it is not raining or no rain is forecast to occur for 3 days and when daytime temperatures are at least 50 degrees Fahrenheit.
c) Suitable or occupied trees will be removed in a step-wise process; initially larger limbs will be removed and then work will cease. After at least one overnight period, trunks will be felled, gently lowered to the ground, and left undisturbed for at least one overnight period before removal.
d) Structures containing or suspected to contain roost sites will be removed under the supervision of a biologist.

MM-7. The following measures will be implemented for Project activities conducted between March 1 and August 15 to minimize impacts to Swainson's hawk (*Buteo swainsoni*):

a) Survey timing and methodologies will aim to follow the Swainson's Hawk Technical Advisory Committee's (2000) *Recommended Timing and Methodology for Swainson's*

Hawk Nesting Surveys in California's Central Valley and will occur within 0.25 mile of the Project Area up to construction start date.

b) As much as feasible, surveys will aim to be conducted during Period II, the early months of the nesting season (March 20 to April 5), to maximize the likelihood of detecting an active nest (Swainson's Hawk Technical Advisory Committee 2000).

c) If active nests are found, a biologist will establish a 0.25 mile no-disturbance buffer in consideration of surrounding waterways. If Project-related activities need to occur within the no-disturbance buffer, a biological monitor experienced with raptor behavior will monitor the nest during work. The biological monitor will have the authority to stop work if nesting hawks are exhibiting agitated behavior. If the birds are tolerant of Project activities, consultation with CDFW will commence for the reduction of the no-disturbance buffer.

MM-8. To the extent practicable, construction will take place outside the typical avian nesting season (February 15 to August 15). If construction is conducted during the nesting season, a biologist will conduct a focused preconstruction nesting bird survey within the Project Area no more than 1 week prior to the initiation of Project activities. The survey will be conducted in all potential nesting habitat located within the Project Area and within a 250-ft buffer and 1,000-ft buffer for passerines and raptors (e.g., *Buteo* spp.), respectively. If construction activities lapse for 7 days or more during the nesting season, a biologist will conduct an additional nesting bird survey in areas of potential habitat before Project activities are reinitiated. If an active nest is identified, a no-disturbance buffer will be established using flagging, fencing, and/or signage as appropriate. No construction activities will occur within the buffer zone until a biologist has determined that the young have fledged or that construction activities within the buffer zone are not disturbing the birds. The width of the buffer zone and whether activities are permitted within it will be determined by a biologist in consultation with CDFW.

MM-9. Western burrowing owl (*Athene cunicularia hypugaea*) could occur in or near the work area. No more than 14 days prior to the start of construction, a biologist will conduct a preconstruction survey for active burrowing owl burrows using methods recommended in CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). Occupied habitat includes areas burrowing owls may use for breeding (February 1 to August 31), wintering (September 1 to January 31), foraging, and migration stopovers. Occupancy of suitable burrowing owl habitat can typically be verified by an observation of at least one burrowing owl or, alternatively, its molted feathers, cast pellets, prey remains, eggshell fragments, excrement, or loose soil near the burrow entrance. If burrowing owl presence is demonstrated, an appropriate buffer of up to 1,600 ft (as recommended in the *Staff Report on Burrowing Owl Mitigation*) will be established by a biologist in consideration of surrounding waterways. Project-related activities necessary within the buffer will be monitored by a biologist to ensure that Project construction does not detrimentally impact the owls. The on-site biologist will have the authority to stop work if the owls are exhibiting agitated behavior.

MM-10. In the event of an inadvertent discovery of cultural resources, Project activity will immediately cease within 25 ft of the discovery. Project work may continue at other locations while the discovery is examined. The potential significance of the discovery will be determined by a qualified archaeologist as defined in 36 Code of Federal Regulations (CFR) § 61. If it is determined that the discovery is not significant, no further investigations are necessary, and Project activities may resume. If the discovery is determined to be significant, additional investigations, such as data recovery, may be necessary before resuming Project activities at the site of the discovery. Any additional archaeological investigations will be designed and

conducted in consultation with the relevant agencies, a qualified archaeologist, and the appropriate Native American Tribes. Regardless of the significance of an inadvertent discovery, all inadvertent discoveries of cultural resources must be appropriately documented and reburied on the project site in a location where the cultural resources will not be disturbed in the future.

MM-11. In the event of an inadvertent discovery of human remains, the provisions of the California Health and Safety Code Section 7050.5, California Public Resources Code Section 5097.98, and Assembly Bill 2641 will be implemented. In addition, all work within 25 ft of the discovery will immediately cease until the discovery can be evaluated by the County Coroner. Project work may continue at other locations while the discovery is examined. If the remains are determined to be Native American, the County Coroner must contact the Native American Heritage Commission (NAHC) who will identify a Most Likely Descendant (MLD) for the remains. The MLD will make recommendations for the recovery, treatment, and disposition of any Native American remains. Final disposition of any inadvertently discovered human remains will be decided in consultation with the MLD and the District.

2 ENVIRONMENTAL SETTING AND IMPACTS

Each of the following resource sections includes a completed checklist (from Appendix G of the CEQA Guidelines) of environmental factors potentially affected and identifies potential Project impacts by significance level (i.e., no impact, less-than-significant impact, less-than-significant impact with mitigation incorporated, and potentially significant impact). The environmental factors checked in Table 2-1 would potentially be affected by this Project; mitigation measures will be implemented to ensure potential impacts are reduced to less than significant levels.

Table 2-1. Summary of environmental factors potentially affected by the Project.

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

2.1 Aesthetics

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
Except as provided in Public Resources Code Section 21099, would the Project:				
a) Have a substantial adverse effect on a scenic vista?	❑	❑	❑	✓
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	❑	❑	❑	✓
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings?	❑	❑	✓	❑
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	❑	❑	❑	✓

2.1.1 Environmental setting

The term *aesthetic*s typically refers to the perceived visual character of an area, such as of a scenic view, open space, or architectural facade. The aesthetic value of an area is a measure of its visual character and visual quality combined with viewer response (SJCOG 2018). This combination may be affected by the components of a project (e.g., buildings constructed at

heights that obstruct views, hillsides cut and graded, open space changed to an urban setting) or by the length or frequency of viewer exposure to a setting. Aesthetic impacts are changes in viewer response as a result of Project construction and operation.

The levees along the perimeter of Egbert Tract provide scenic views of the Delta, including Cache Slough and Lindsey Slough. Views of the tract interior are largely agricultural and include ruderal vegetation, managed agricultural fields, and small patches of Riparian Forest and Scrub-shrub habitat. Viewers include the few residents of the tract, District employees who maintain the tract's infrastructure, and tenant farmers who manage the tract's agricultural fields. People boating in waterways surrounding the tract are not generally able to see the tract's interior because of the existing levees.

2.1.2 Findings

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

Project implementation will not alter the scenic views of Cache Slough or Lindsey Slough from Egbert Tract. Views of the tract interior are not scenic, as described above, and will not change following Project construction. Therefore, the Project will not impact the scenic vista.

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

No state scenic highways pass through the Project Area, and the Project Area is not visible from any state scenic highways. Therefore, the Project will not impact scenic resources.

c) In nonurbanized areas, would the Project substantially degrade the existing visual character or quality of public views of the site and its surroundings?

Construction activities will temporarily disrupt the visual character of the Project Area. During Project construction, vegetation within the construction footprint, including up to approximately 50 non-native trees, will be removed and portions of the Lindsey Slough levee will be excavated. These activities will temporarily degrade the visual quality of the site. Construction equipment may be visible to boaters using the adjacent waterways or the limited number of visitors to or residents of the tract. These impacts will occur for a short period (i.e., approximately 1 month). After Project completion, construction equipment will be removed, and the levee slopes or other disturbed areas will be hydroseeded with a native seed mix. Removed non-native trees will be replaced with native trees as described in Section 2.4 and **MM-1**. Therefore, the Project will result in less-than-significant impacts to, and will not permanently degrade, the visual character or aesthetic quality of the Project Area or surrounding areas.

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

The Project will not create a new source of light or glare; therefore, the Project will not impact day or nighttime views in the area.

2.2 Agriculture and Forestry Resources

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
Would the Project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	❑	❑	❑	✓
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	❑	❑	❑	✓
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220[g]), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104[g])?	❑	❑	❑	✓
d) Result in the loss of forest land or conversion of forest land to non-forest use?	❑	❑	❑	✓
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	❑	❑	❑	✓

2.2.1 Environmental setting

The Project's location in the Sacramento Valley near Lindsey and Cache sloughs has allowed for the development of deep, rich agricultural soil over time. This rich soil and a climate with a lengthy growing season promote extensive agricultural production in Solano County. The county has approximately 360,000 acres of land in agricultural production, and most of this acreage is in active production for fruit and nut crops, vegetable crops, or livestock (Solano County 2008). Much of the approximately 5,700 acres on the interior of Egbert Tract is in agricultural production for field or vegetable crops.

2.2.1.1 Farmland

The California Farmland Mapping and Monitoring Program (FMMP), administered by the State Division of Land Resource Protection, is responsible for producing agricultural resource maps based on soil quality and land use. The FMMP designates land into the following categories: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land, Urban or Built-up Land, Other Land, and Water. Descriptions of these categories are detailed in the FMMP (California DOC 2025a).

Approximately half of Egbert Tract is designated as either Farmland of Statewide Importance or Prime Farmland, while much of the remaining land is designated as Grazing Land (California DOC 2025b). The entire Project Area (7.6 acres) is designated as Other Land.

2.2.2 Findings

a) Would the Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

The Project Area includes 7.6 acres of land designated as Other Land and is primarily composed of levees that protect the adjacent agricultural fields, which are designated as Prime Farmland. The levees will be restored to their current use following Project construction and continue to protect the adjacent Prime Farmland. The Project will not impact lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the Project Area.

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

The Project Area is currently zoned for agricultural use and included in a Williamson Act contract. However, the Project footprint is limited to the levee along Lindsey Slough and immediately adjacent areas (e.g., levee toe), which are not used for agricultural production. Land use within the Project Area will not change following Project construction; therefore, the Project will not impact existing zoning or conflict with the Williamson Act contract.

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

The Project Area is not zoned as forest land or timberland. The Project will not impact existing zoning or result in rezoning.

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

The Project will not result in the loss of forest land or conversion of forest land to non-forest use.

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

Land use within the Project Area and vicinity will not change following Project construction; therefore, the Project will not involve other changes in the existing environment that could result in conversion of Farmland to non-agricultural use.

2.3 Air Quality

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
Would the Project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	❑	❑	✓	❑
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard?	❑	❑	✓	❑
c) Expose sensitive receptors to substantial pollutant concentrations?	❑	❑	✓	❑
d) Result in other emissions such as those leading to odors adversely affecting a substantial number of people?	❑	❑	❑	✓

2.3.1 Environmental setting

The Project is in the Sacramento Valley Air Basin, which includes Butte, Colusa, Glenn, Placer (western), Sacramento, Shasta, Solano (eastern), Sutter, Tehama, Yolo, and Yuba counties, and is administered by the Yolo-Solano Air Quality Management District (YSAQMD). The Sacramento Valley Air Basin is bounded by mountainous areas to the east, west, and north, with an opening to the south into the Delta. The region experiences relatively long summers with generally hot and dry conditions and short winters with cool, wet conditions. Subtropical high air pressure events can occur year-round and result in the formation of strong atmospheric inversion layers. The combination of these topographical and meteorological factors can prevent the dispersion of pollutants and is particularly conducive to poor air quality.

2.3.1.1 Criteria air pollutants

The federal Clean Air Act of 1970 (Section 6.1) and CARB have established air quality standards for several common pollutants: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, sulfur dioxide, sulfates, and hydrogen sulfide (CARB 2025a). Air quality data for some criteria air pollutants in the Sacramento Valley Air Basin from 2018 to 2023 are summarized in Table 2-2 to describe existing conditions.

Table 2-2. Summary air quality statistics for the Sacramento Valley Air Basin, 2018 to 2023.

Year	Pollutant (averaging time)	Maximum concentration[1]	Federal standard	Days exceeding federal standards	State standard	Days exceeding state standard
2018	Ozone (1-hour)	0.117 ppm	NA	NA	0.09 ppm	11
	Ozone (8-hour)	0.098 ppm	0.070 ppm	36	0.070 ppm	42
	$PM_{2.5}$ (daily)	411.7 µg/m^3	35 µg/m^3	24	NA	NA
	PM_{10} (daily)	454.0 µg/m^3	150 µg/m^3	9	50 µg/m^3	60
2019	Ozone (1-hour)	0.103 ppm	NA	NA	0.09 ppm	3
	Ozone (8-hour)	0.082 ppm	0.070 ppm	12	0.070 ppm	15
	$PM_{2.5}$ (daily)	41.4 µg/m^3	35 µg/m^3	3	NA	NA
	PM_{10} (daily)	174.7 µg/m^3	150 µg/m^3	1	50 µg/m^3	45
2020	Ozone (1-hour)	0.137 ppm	NA	NA	0.09 ppm	9
	Ozone (8-hour)	0.097 ppm	0.070 ppm	29	0.070 ppm	33
	$PM_{2.5}$ (daily)	329.3 µg/m^3	35 µg/m^3	34	NA	NA
	PM_{10} (daily)	391.3 µg/m^3	150 µg/m^3	10	50 µg/m^3	77
2021	Ozone (1-hour)	0.114 ppm	NA	NA	0.09 ppm	13
	Ozone (8-hour)	0.097 ppm	0.070 ppm	52	0.070 ppm	56
	$PM_{2.5}$ (daily)	265.7 µg/m^3	35 µg/m^3	26	NA	NA
	PM_{10} (daily)	218.2 µg/m^3	150 µg/m^3	1	50 µg/m^3	48
2022	Ozone (1-hour)	0.106 ppm	NA	NA	0.09 ppm	2
	Ozone (8-hour)	0.085 ppm	0.070 ppm	25	0.070 ppm	27
	$PM_{2.5}$ (daily)	212.8 µg/m^3	35 µg/m^3	10	NA	NA
	PM_{10} (daily)	108.7 µg/m^3	150 µg/m^3	0	50 µg/m^3	17
2023	Ozone (1-hour)	0.104 ppm	NA	NA	0.09 ppm	1
	Ozone (8-hour)	0.083 ppm	0.070 ppm	14	0.070 ppm	14
	$PM_{2.5}$ (daily)	54.2 µg/m^3	35 µg/m^3	3	NA	NA
	PM_{10} (daily)	80.8 µg/m^3	150 µg/m^3	NA[2]	50 µg/m^3	13

Source: CARB (2024a, 2025a)

Notes: µg/m^3 = microgram per cubic meter of air
NA = not applicable
$PM_{2.5}$ = respirable particulate matter less than 2.5 microns in diameter
PM_{10} = respirable particulate matter less than 10 microns in diameter
ppm = parts per million

[1] Maximum concentration observed in the Sacramento Valley Air Basin based on national reference or equivalent method, which adjusts observations to standardized conditions to eliminate variability and allow for comparison across locations.

[2] Insufficient data available to determine the value.

Air quality in the YSAQMD does not consistently meet all applicable air quality standards. The YSAQMD is currently designated as being in nonattainment for state ozone and PM_{10} (respirable particulate matter less than 10 microns in diameter) standards and for federal ozone and $PM_{2.5}$ (respirable particulate matter less than 2.5 microns in diameter; 24-hour) standards (YSAQMD 2022, USEPA 2025). YSAQMD reported submitting a clean data finding to the U.S. Environmental Protection Agency (USEPA) for the 2008 Federal Ozone Standard as part of the Sacramento Federal Ozone Nonattainment Area, putting the region on track to meet its attainment deadline of mid-year 2025 (YSAQMD 2024). The Project Area is designated as being in attainment for state and federal carbon monoxide, $PM_{2.5}$ (annual mean), lead, nitrogen dioxide, sulfur dioxide, as well as state sulfate standards (YSAQMD 2022). Therefore, criteria air

pollutants and precursors of primary concern for construction activity within the Project Area include ozone precursors (e.g., nitrogen oxides, reactive organic gases), fugitive/exhaust dust particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$).

YSAQMD has established an Air Quality Attainment Plan to aid in the attainment of federal and state ozone standards, largely through emissions reductions (YSAQMD 2019). In accordance with this plan and state and federal air quality standards, YSAQMD has developed emissions thresholds for criteria pollutants for which the Project region is designated as being in non-attainment, and these emissions thresholds are to be used in determining the significance of Project-related air quality impacts (YSAQMD 2007). Because YSAQMD emissions thresholds are more stringent than USEPA thresholds, emissions are considered significant if they exceed the local thresholds. Thresholds established by YSAQMD are 10 tons per year of nitrogen oxides, 80 pounds per day of PM_{10}, and 10 tons per year of reactive organic gases. Additionally, the emissions threshold of significance for carbon monoxide is equivalent to the state ambient air quality standards, which are 20 parts per million (1-hour average) and 9 parts per million (8-hour average) (YSAQMD 2007, CARB 2025b).

In addition to thresholds for criteria pollutants, YSAQMD has adopted a threshold of significance for odors. While there is no numerical standard for this threshold, a project is considered to have a significant adverse odor impact if it "generates odorous emissions in such quantities as to cause detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which may endanger the comfort, repose, health, or safety of any such person or the public, or which may cause, or have a natural tendency to cause, injury or damage to business or property" (YSAQMD 2007).

2.3.1.2 Sensitive receptors

Some individuals have heightened health risks associated with exposure to air pollution, and for some air quality constituents, impacts are determined based on the distance to the closest sensitive receptor. Sensitive receptors include but are not limited to residential areas, schools, and hospitals. The nearest sensitive receptors to the Project Area are a few semi-permanent rural residences approximately 200 ft south of the Project Area and two additional rural residences on the opposite side of Lindsey Slough on Hastings Island, approximately 0.25 mile from the Project Area. Other rural residences in the vicinity are greater than 1 mile from the Project Area.

2.3.2 Findings

Project construction details (e.g., duration, timing, equipment use) were analyzed using the California Emissions Estimator Model, version 2022.1.1.29 (CalEEMod), to estimate Project emissions, including exhaust from construction equipment, fugitive dust generated by construction activities, and emissions from vehicle travel over unpaved roads. Operational emissions were not analyzed because operations or maintenance activities will not change following Project construction. The CalEEMod data entry and emissions summary sheet is included as Appendix A.

The modeling was based on the emission sources provided in Table 2-3 and the construction equipment and the number of hours of construction equipment use provided in Table 1-1. Additional model assumptions included implementation of air quality BMPs as part of the Project in conservation measure **CM-1** (e.g., application of water to control dust and visible emissions, enforcement of speed limits on unpaved roads). Model results for total anticipated Project emissions of criteria pollutants for which the Project region is designated as non-attainment are

shown in Table 2-4 and included in detail in Appendix A. Calculations used to determine the maximum Project emissions in micrograms per cubic meter of air ($\mu g/m^3$) are described in Appendix Table A-1.

Table 2-3. Project emission sources and quantities used to determine emissions.

Emission source	Project quantities (Phase I)	Project quantities (Phase II)
Excavated levee fill material	13,500 cubic yards	20,500 cubic yards
Imported levee fill material	14,500 cubic yards	16,500 cubic yards
Imported aggregate base[1]	1,500 cubic yards	1,500 cubic yards
Fuel-fired construction equipment	Dozer, CAT D6 (1) Excavator, CAT 330 (2) Compactor, CAT CS5 (1) Motor Grader, CAT 140L (1) Scraper, CAT 621 (1) Backhoe, CAT 416 (1) Water truck (1) Haul trucks (35 trips per day)[2] Foreman/super pickups, F350 (2)	Dozer, CAT D6 (1) Excavator, CAT 330 (2) Compactor, CAT CS5 (1) Motor Grader, CAT 140L (1) Scraper, CAT 621 (1) Backhoe, CAT 416 (1) Water truck (1) Haul trucks (30 trips per day)[2] Foreman/super pickups, F350 (2)
Employee commute trips	6 employee trips/day 50 miles one way[3]	6 employee trips/day 50 miles one way[3]

Source: MBK Engineers (2025).

[1] Approximately 1,500 cubic yards of aggregate base estimated from a total of 2,000 tons during each Phase of construction.

[2] Total estimated trips averaged across maximum estimated length for each Phase of construction.

[3] Maximum estimated employee commute travel distance.

Table 2-4. Estimated Project construction emissions of criteria pollutants for which the Project region is designated as non-attainment.

	NO_X (tons/year)	PM_{10} (lbs/day)	$PM_{2.5}$ ($\mu g/m^3$ per day)[1]	ROG (tons/year)
Maximum Project emissions	1.41	7.14	2.54	0.13
YSAQMD emissions threshold	10	80	35	10

Source: California Emissions Estimator Model, version 2022.1.1.29, 2024 ICF (2022)

Notes: lbs = pounds
$\mu g/m^3$ = microgram per cubic meter of air
NO_x = nitrogen oxides
$PM_{2.5}$= respirable particulate matter (less than 2.5 microns in diameter)
PM_{10} = respirable particulate matter (less than 10 microns in diameter)
ROG = reactive organic gases
YSAQMD = Yolo-Solano Air Quality Management District

[1] YSAQMD is designated as non-attainment for the 2006 federal $PM_{2.5}$ standard.

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

Based on air quality modeling, Project construction is expected to result in temporary emissions of ozone precursors (i.e., nitrogen oxides and reactive organic gases) that are below YSAQMD standards and therefore do not conflict with emissions reductions goals outlined in the applicable YSAQMD Air Quality Attainment Plan (YSAQMD 2019). Although the applicable air quality plan does not outline specific requirements for mobile emission sources used during Project construction (i.e., equipment, vehicles), BMPs implemented as part of conservation measure **CM-**

1 (Section 1.4.5) will ensure emissions of ozone precursors are minimized. Operational emissions were not analyzed because there will be no change in operations or maintenance activity associated with Project construction. Because the Project will not conflict with or obstruct implementation of an applicable air quality plan, and the temporary emissions of ozone precursors from Project construction will be minimized by implementing conservation measure **CM-1**, Project impacts will be less than significant.

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

The model results summarized in Table 2-4 demonstrate that emissions resulting from Project construction activities are not expected to exceed thresholds for criteria air pollutants for which the YSAQMD is currently designated as nonattainment (including PM_{10}, $PM_{2.5}$ and ozone precursors [i.e., nitrogen oxides, reactive organic gases]), and implementation of BMPs in conservation measure **CM-1** (Section 1.4.5) will ensure emissions are minimized. Long-term operational emissions will not change because of the Project. Although Project construction will result in some emissions for which the YSAQMD is not in attainment, the minimal amount and temporary nature of these emissions will not result in a cumulatively considerable net increase of these pollutants; therefore, Project impacts will be less than significant.

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

The nearest sensitive receptors to the Project Area are the few semi-permanent rural residences approximately 200 ft south of the Project Area and two additional rural residences on the opposite side of Lindsey Slough on Hastings Island, approximately 0.25 mile from the Project Area. Other rural residences in the vicinity are greater than 1 mile from the Project Area.

The Project will not result in substantial diesel particulate emissions (Table 2-4). Implementation of BMPs included in conservation measure **CM-1** (Section 1.4.5) will minimize diesel emissions, and Project construction activities will be temporary, resulting in increased diesel exhaust for approximately 9 to 12 weeks. Therefore, the Project's impact of exposing sensitive receptors to substantial pollutant concentrations will be less than significant.

d) Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Project construction is not expected to result in other emissions, such as those leading to objectionable odors, adversely affecting a substantial number of people. Post-construction, the Project will not result in any change to current operation or maintenance activities and thereby will not result in additional emissions. Therefore, the Project will not result in emission impacts that will adversely affect a substantial number of people.

2.4 Biological Resources

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
Would the Project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	❑	✓	❑	❑
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?	❑	✓	❑	❑
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	❑	❑	❑	✓
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	❑	❑	❑	✓
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	❑	❑	❑	✓
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	❑	❑	❑	✓

2.4.1 Environmental setting

Resource evaluations were performed to identify sensitive biological resources or available habitat within or near the Project Area. These evaluations included land cover classification and vegetation mapping, surveys for special-status plants, habitat assessments for special-status wildlife species, and a delineation of potentially jurisdictional waters/wetlands. Fish species are not included because the Project will not require in-water work or work affecting Shaded Riverine Aquatic cover. Results from these evaluations were used to inform impact analyses and the development of appropriate conservation measures.

2.4.1.1 Special-status species and sensitive natural communities

Special-status plants, wildlife, and sensitive natural communities with the potential to occur within or near the Project Area were identified through a query of the following resources:

- CDFW's California Natural Diversity Database (CNDDB; CDFW 2025a) for the U.S. Geological Survey (USGS) 7.5-minute quadrangle in which the Project Area is located (Rio Vista) and the surrounding eight quadrangles (i.e., Dozier, Liberty Island, Courtland, Birds Landing, Isleton, Antioch North, Jersey Island, and Bouldin Island);
- USFWS's Information for Planning and Conservation portal (USFWS 2025a); and
- California Native Plant Society's online Inventory of Rare and Endangered Vascular Plants of California (CNPS 2025a).

Database query results are presented in Appendix B (for special-status plants and sensitive natural communities) and Appendix C (for special-status wildlife species). The habitat preferences and distributional range of each species from the database queries were compared with existing information and the results of field surveys to determine their potential to occur within the Project Area. These evaluations resulted in a refined list of species that may be impacted by the Project activities. If a species' required habitat was lacking from the Project Area or if the Project Area is outside the species' known distribution or elevation range, the species was considered not likely to occur.

Plants

Stillwater Sciences biologists conducted a special-status plant survey on April 16, 2025 (C. Bilodeau and J. CantoAdams) and on July 2, 2025 (C. Bilodeau and H. Feldman). Botanical surveys for special-status plants were comprehensive, conducted during appropriate bloom periods, and followed accepted protocols (USFWS 2000, CDFW 2018).

No special-status plant species were documented within the Project Area during 2025 botanical surveys. A comprehensive list of all plants documented within the Project Area during the April and July 2025 botanical surveys is included in Appendix D.

Wildlife

Database queries identified 47 special-status wildlife species that have the potential to occur in the vicinity of the Project (Appendix C). Stillwater Sciences wildlife biologists (M. Montjoy and B. Roxbrough) conducted a wildlife habitat assessment on March 5, 2025, to determine the likelihood for these species to occur within the Project Area. Based in this assessment, 18 species (Table 2-5) have a moderate or high potential to occur within the Project Area or suitable breeding habitat for them is present within or near the Project Area. The remaining 29 species have no or low potential to occur within or near the Project Area due to a lack of suitable habitat or the Project Area is outside the species' known range (Appendix C); these species are not analyzed further.

Table 2-5. Special-status wildlife included for analysis for Project-related impacts.

Common name *Scientific name*	Status[1] Federal/State	Likelihood to occur within the Project Area
Reptiles		
Northwestern pond turtle *Actinemys marmorata*	FPT/SSC	**High.** Suitable aquatic habitat is present adjacent to the Project Area in Lindsey Slough and the interior agricultural ditch. The uplands between these areas may be used as dispersal, but they are routinely managed, travelled, or disturbed, making them less likely to be used by the species for nesting. Stillwater Sciences biologists observed 10 northwestern pond turtles basking on emergent structures near the water control structure in the agricultural ditch adjacent to the Project Area during a November 2023 site visit. Biologists also have regularly observed western pond turtle on nearby Prospect Island, approximately 2 miles east of the Project Area.
Giant garter snake *Thamnophis gigas*	FT/ST	**High.** The Project Area is within the species' range and is surrounded by suitable aquatic habitat in Lindsey Slough and the agricultural ditch on the landside of the levee. While no burrows and limited subterranean refugia were observed within the Project Area during the March 2025 habitat assessment, there are 5 documented occurrences (from 2018 to 2022) of 12 snakes in Shag Slough, approximately 2 to 3 miles north of the Project Area (CDFW 2025a).
Birds		
Greater and lesser sandhill crane *Antigone canadensis tabida; Antigone canadensis canadensis*	–/ST, SPF (greater) –/SSC (lesser)	**Moderate (foraging only).** The Project Area is not within the nesting range of the species and does not contain suitable nesting habitat. However, wintering individuals may forage within the Project vicinity. Hundreds of individuals (subspecies not denoted) have been observed within 5 miles (in all directions) of the Project Area, as recently as March 2025 (eBird 2025).
American white pelican *Pelecanus erythrorhyncos*	–/SSC	**Moderate (foraging only).** The Project Area is not within the nesting range of the species and does not contain suitable nesting habitat. However, wintering individuals may forage or roost in Lindsey Slough near the Project Area. Hundreds of individuals have been observed around Miner Slough Wildlife Area on Prospect Island (from 2019 to 2024), approximately 2 miles east of the Project Area (eBird 2025).
White-tailed kite *Elanus leucurus*	–/SFP	**High.** Suitable foraging and nesting habitat is present around the Project Area in oak trees and grasses that are adjacent to open water and agricultural areas. White-tailed kite have been observed on Egbert Tract along Liberty Island Road, approximately 1.0 mile southwest of the Project Area, as recently as January 2024 (eBird 2025).
Golden Eagle *Aquila chrysaetos*	BGEPA/SFP	**Moderate (foraging only).** The Project Area is not within the nesting range of the species and does not contain suitable nesting habitat. However, wintering individuals may forage or roost within the Project Area (on power poles, oak trees, or structures). About 10 individuals have been observed in agricultural areas, approximately 5 miles southwest of the Project Area, in 2024 and 2025 (eBird 2025).

Common name ***Scientific name***	**Status[1]** **Federal/State**	**Likelihood to occur within the Project Area**
Northern harrier *Circus hudsonius*	–/SSC	**High (foraging only).** While the Project Area lacks suitable vegetation for nesting, it contains suitable foraging habitat for the species and suitable nesting habitat exists in the vicinity of the Project. Stillwater biologists observed an individual flying over the Project Area during the March 2025 habitat assessment. Other observations within 2 miles of the Project Area have been noted as recently as January 2025 (eBird 2025).
Bald Eagle *Haliaeetus leucocephalus*	FD, BGEPA/SE, SFP	**Moderate (foraging only).** Bald eagles may forage adjacent to the Project Area in Lindsey Slough, but no suitable large trees are present for nesting. Eagles have been observed approximately 2 miles east around Miner Slough Wildlife Area on Prospect Island in 2022 (eBird 2025).
Swainson's hawk *Buteo swainsoni*	–/ST	**High**. Suitable foraging habitat exists in the agricultural fields near the Project Area and in the oak trees suitable for nesting within the Project Area. Stillwater Sciences biologists have documented multiple Swainson's hawk nests or pairs on Prospect Island, approximately 4 miles northeast of the Project Area in 2024 and 2025. Additionally, multiple individuals have been observed less than 2 miles from the Project Area (eBird 2025).
Western burrowing owl *Athene cunicularia hypugaea*	–/SCE, SSC	**Moderate.** Areas adjacent to access roads contain grassland habitats that are suitable for nesting and foraging, although no suitable burrows were observed within the Project Area. Eight burrowing owls were observed 2 miles southwest of the Project Area in January 2025 (CDFW 2025b). Additionally, several recent observations of the species have been made near the Project Area nearby on Egbert Tract (eBird 2025).
Loggerhead shrike *Lanius ludovicianus*	–/SSC	**Moderate.** The Project Area contains suitable nesting and foraging habitat such as small trees, spiny shrubs, and open bare or grassy areas. Many individuals have been observed approximately 5 miles southwest of the Project Area (eBird 2025).
Song sparrow ("Modesto" population) *Melospiza melodia*	–/SSC	**High.** Suitable nesting and foraging habitat is present within the Project Area in the riparian vegetation, grassy patches, and small bushes. Stillwater Sciences biologists observed song sparrows within the Project Area during the March 2025 habitat assessment.
Yellow-breasted chat *Icteria virens*	–/SSC	**Moderate.** The Project Area is within the breeding range of the species. Low, dense vegetation suitable for nesting and foraging borders the northern edge of the Project Area. The species may also use adjacent agricultural fields for foraging. Yellow-breasted chat have been observed on Ryer Island and Twitchell island approximately 4 miles east and 9 miles southeast of the Project Area, respectively (eBird 2025).
Tricolored blackbird *Agelaius tricolor*	–/ST, SSC	**High.** Suitable foraging habitat is present within and adjacent to the Project Area. Hundreds of individuals have been reported along Liberty Island Road in January 2024 and in Lindsey Slough in May 2023, approximately 2 miles southwest and 1 mile northwest of the Project Area, respectively (eBird 2025).
Yellow warbler *Setophaga petechia*	–/SSC	**Moderate.** The Project Area is within the breeding range of the species. Deciduous thickets and willows along water (i.e. Lindsey Slough) suitable for nesting and foraging border the northern edge of the Project Area. Yellow warblers have been observed approximately 2 miles east around Miner Slough Wildlife Area on Prospect Island as recently as 2023 (eBird 2025).

Common name ***Scientific name***	**Status[1]** **Federal/State**	**Likelihood to occur within the Project Area**
Mammals		
Western red bat *Lasiurus frantzii*	–/SSC	**Moderate.** The Project Area contains riparian trees suitable for roosting such as oaks and willows but lacks the preferred canopy density; however, agricultural lands and grasslands adjacent to the Project Area may serve as foraging habitat. The North American Bat Acoustic Monitoring Portal documented western red bat in Grants Reporting and Tracking System 7914 in July 2022, approximately 7 miles southwest of the Project Area (CBI and USFS 2025). In 1999, four other historical detections of the species were made in similar habitats approximately 8 miles to the east and southeast of the Project Area (CDFW 2025a).
Pallid bat *Antrozous pallidus*	–/SSC	**Moderate.** The Project Area contains riparian trees suitable for roosting, such as oaks and willows, but lacks rock crevices that are often used. Pallid bats will also roost under bridges, which exist adjacent to the Project Area (e.g., Liberty Island Bridge over Lindsey Slough), but observations of the species have not been reported within 10 miles of the Project Area (CDFW 2025a,b).

[1] Status

Federal
FT = Listed as threatened under the federal Endangered Species Act
FD = Federally delisted
FPT = Federally proposed as threatened
BGEPA = Federally protected under the Bald and Golden Eagle Protection Act

State
SE = Listed as Endangered under the California Endangered Species Act
ST = Listed as Threatened under the California Endangered Species Act
SCE = State Candidate Endangered
SSC = CDFW Species of Special Concern
SFP = CDFW Fully Protected species

Other migratory birds

In addition to special-status species, other migratory birds could establish nests in and near the Project Area. Suitable trees, riparian corridors, and emergent vegetation within and adjacent to the Project Area could provide nesting habitat for a variety of bird species. Additionally, the ruderal vegetation present within the Project Area could be used by ground-nesting bird species. The nesting season for migratory birds is generally February 1 through August 15. Protection of migratory birds, including their active nests (i.e., containing eggs or young), is required by California Fish and Game Code Sections 3503, 3513, and 3800.

2.4.1.2 Vegetation types

Stillwater Sciences biologists (C. Bilodeau and K. Rodriguez) mapped the landcover within the Project Area on March 31, 2025. Vegetation types were assessed to the extent necessary to determine suitable habitat for special-status wildlife species and to document sensitive natural communities. Sensitive natural communities with the potential to occur within the Project Area were identified prior to field surveys by querying the CNDDB, as described in Section 2.4.1.1 (Appendix B).

Vegetation types within the Project Area are largely composed of non-native annual grasslands and cork oak woodland (*Quercus suber* woodland). Two sensitive natural communities—Hardstem and California bulrush marshes [*Schoenoplectus* (*acutus*, *californicus*) Herbaceous Alliance] and red willow riparian woodland and forest [*Salix laevigata* Forest and Woodland Association]—are present within the Project Area. Vegetation types within the Project Area are summarized in Table 2-6 and depicted in Figure 2-1.

Table 2-6. Vegetation and land cover types within the Project Area.

Vegetation type	Land cover/ habitat type	Sensitive natural community?[1]	Acres	Percent of Project Area
Cork oak woodland *Quercus suber* woodland	Riparian Woodland	No	2.28	30%
Hardstem and California bulrush marshes *Schoenoplectus* (*acutus*, *californicus*) herbaceous alliance	Freshwater Marsh	Yes, S3S4	1.10	14%
Red willow riparian woodland and forest *Salix laevigata* forest and woodland association	Scrub-shrub	Yes, S3	0.11	1%
Annual non-native grasslands	Ruderal herbaceous	No	2.26	30%
Total vegetated			5.75	75%
Road			1.87	25%
Total			**7.63**	**100%**

[1] Sensitive natural community rankings (CNPS 2025b, CDFW 2025c)
S3 = vulnerable
S3S4 = vulnerable/apparently secure



Figure 2-1. Vegetation types within the Project Area.

Cork oak woodland
Within the Project Area, cork oak woodland (*Quercus suber* woodland)[1] is dominated by the non-native tree cork oak (*Quercus suber*). A few individuals of Northern California black walnut (*Juglans hindsii*) were also present in the mid-story. The understory consists of herbaceous species, including wall barley (*Hordeum murinum*), ripgut brome (*Bromus diandrus*), Italian thistle (*Carduus pycnocephalus* subsp. *pycnocephalus*), and geranium (*Geranium* sp.) A total of 2.28 acres (30%) of the Project Area is cork oak woodland (Table 2-6, Figure 2-1).

Hardstem and California bulrush marshes
Within the Project Area, hardstem and California bulrush marshes (*Schoenoplectus* [*acutus, californicus*] herbaceous alliance) are dominated by the native species common tule (*Schoenoplectus acutus* var. *occidentalis*). Associated forbs include native species like common cocklebur (*Xanthium orientale*) and tall flatsedge (*Cyperus eragrostis*), as well as nonnative species like poison hemlock (*Conium maculatum*) and curlydock (*Rumex crispus*). A total of 1.10 acres (14%) of the Project Area is hardstem and California bulrush marshes, which have a sensitive natural community rank of S3S4 (vulnerable, apparently secure) (CNPS 2025b) (Table 2-6, Figure 2-1).

Red willow riparian woodland and forest Association
Within the Project Area, red willow riparian woodland and forest (*Salix laevigata* forest and woodland alliance) are dominated by the native species red willow (*Salix laevigata*), with arroyo willow (*Salix lasiolepis*) also present in the shrub layer. The herbaceous layer includes native species southern cattail (*Typha domingensis*) and common tule, and nonnative species Himalayan blackberry and curlydock. A total of 0.11 acre (1%) of the Project Area is red willow riparian woodland and forest, which has a sensitive natural community rank of S3 (vulnerable) (CNPS 2025b) (Table 2-6, Figure 2-1).

Road
Liberty Island Road is a gravel road that traverses the levee crown throughout the Project Area. A small dirt road parallels Liberty Island Road on the interior levee and provides access to the irrigation canal near the eastern end of the Project Area (Figure 2-1). These roads cover a total of 1.85 acres (23%) of the Project Area (Table 2-6).

2.4.1.3 Waters and wetlands

Stillwater Sciences biologists (K. Rodriguez and C. Bilodeau) conducted a preliminary delineation of potentially jurisdictional wetlands within the Project Area on March 31, 2025, in accordance with the *Corps of Engineers Wetlands Delineation Manual* (USACE 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008). The following resources were queried and referenced to inform the delineation:

- USFWS's National Wetlands Inventory online application, Wetlands Mapper (USFWS 2025b)
- U.S. Department of Agriculture, Natural Resources Conservation Service's Soil Survey Geographic Database (USDA NRCS 2025a), and
- Hydric Soils List for Solano County (USDA NRCS 2025b).

[1] Cork oak woodland is not an alliance included in the Manual of California Vegetation; however, the species is dominant in the mapped area.

The field delineation of potentially jurisdictional wetlands was conducted following the methods presented in *National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams: Interim Version* (USACE 2025a) and the *Interim Draft Rapid Ordinary High Water Mark (OHWM) Field Identification Data Sheet* (USACE 2024). Additional or extended waters and wetland features that may fall under the regulatory purview of CDFW or the Central Valley Regional Water Quality Control Board (RWQCB) were delineated in consideration of California Fish and Game Code (Section 1600 et seq.) and the Porter-Cologne Water Quality Control Act, respectively (see Section 6.2).

The 7.63-acre Project Area does not contain wetlands or Waters of the United States.

2.4.2 Findings

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

Special-status plants

No special-status plant species were documented within the Project Area during April or July 2025 surveys; therefore Project-related impacts on special-status plants are not anticipated.

If special-status plants are found prior to construction, impacts to special-status plants will be avoided, where possible, using protections in mitigation measure **MM-2** (Section 1.4.6). Per mitigation measure **MM-2**, special-status plant surveys will be conducted prior to Project construction, and any special-status plants that could potentially be damaged or destroyed by Project activities will be flagged for avoidance. Measure **MM-2** describes how a biologist will be present to monitor construction activities within established buffers. Project impacts to special-status plants will therefore be less than significant with mitigation incorporated.

Special-status wildlife

Northwestern pond turtle

Northwestern pond turtles that may occur in Lindsey Slough or the agricultural ditch in or near the Project Area will likely disperse from areas during Project activities. However, turtles that may travel along uplands within the Project Area could collide or be hit with vehicles or construction equipment during Project activities. No suitable nesting habitat for the species is present within the Project Area, so impacts to nests are not anticipated. No suitable aquatic or basking habitat is expected to be affected during the Project activities because no dewatering or waterside work is planned to occur. Implementation of conservation measures **CM-1** (speed limits) and **CM-2** (ceasing work if the species is detected) and mitigation measures **MM-3** and **MM-4** (providing environmental awareness training and conducting preconstruction survey, respectively) will reduce impacts to the species to less-than-significant levels.

Giant garter snake

The waterways and associated uplands of Lindsey Slough and the interior agricultural ditch provide suitable foraging and marginally suitable basking or overwintering habitat for giant garter snakes. Project activities near these areas could obstruct giant garter snake movement or feeding activities, fill or crush burrows or crevices potentially used for cover (via use of heavy machinery), and could result in disturbance (via vibration, human presence), displacement, injury, and/or mortality (e.g., from vehicle collisions) of individual giant garter snakes. However, because the Project Area contains marginal upland habitat (mostly composed of disturbed areas

and existing roadways where no burrows were observed) potential for injury or mortality of a snake is low. Furthermore, giant garter snakes are sensitive to human activities and will typically flee to avoid people or disturbances.

The loss of habitat from the removal of upland vegetation and changes to the marginal upland habitat within the Project Area will be temporary. No aquatic foraging habitat will be impacted because dewatering or emergent vegetation removal will not occur. Consequently, the Project will not result in significant adverse impacts to habitat availability for giant garter snake.

Implementation of mitigation measure **MM-5** (which includes limiting ground disturbance to the snakes' active season, conducting a preconstruction survey, and restricting mono-filament netting) will reduce the likelihood that a snake would be affected by Project activities. Additionally implementation of conservation measures and mitigation measures **CM-1**, **CM-2**, and **MM-3** (Sections 1.4.5 and 1.4.6) will further minimize the potential for impacts to the species to less-than-significant levels.

Western red bat and pallid bat

The mature riparian and oak trees adjacent to and within the Project Area could potentially support roosting western red and pallid bats. While these bats were not observed during the March 2025 habitat assessment, Project-related impacts to western red bat and pallid bat could occur if active roost sites are disturbed by removal or trimming of suitable trees while roosting bats are present or by construction noise or vibration.

Tree removal associated with the Project will not represent a significant loss of bat roosting habitat; however, removal could impact individual bats if they are roosting at the time of removal. Mitigation measure **MM-3** includes training construction personnel in the ecological value of the site, including tree-roosting bats, and steps to take to avoid or minimize impacts. Mitigation measure **MM-6** involves conducting a bat habitat assessment and taking protective actions if occupied roosts are suspected or confirmed in trees or structures slated for removal. With implementation of these mitigation measures, Project impacts to western red bat and pallid bat will be less than significant.

Special-status and migratory birds

Project-related construction activities and vegetation removal during the nesting season for special-status or migratory birds (generally February 15 through August 15) could lead to direct (e.g., failure or abandonment of an active nest, collision from vehicles or heavy machinery) or indirect impacts (e.g., loss of suitable breeding or foraging habitat) to bird species or their available nesting habitat. Project-related impacts may occur from construction noise (e.g., from heavy equipment, vehicles, generators, or human presence), vibration near ground nests or in nearby trees, vegetation removal (shrubs, ruderal vegetation, trees, or tree trimming), or visual disturbance (e.g., increased human or equipment activity near nests).

The Project Area contains suitable habitat for arboreal or riparian nesting special-status species (including Swainson's hawk [*Buteo swainsoni*], white-tailed kite [*Elanus leucurus*], loggerhead shrike [*Lanius ludovicianus*], or tricolored blackbird [*Agelaius tricolor*]) in the mature trees found in the Riparian Woodland or Scrub-shrub habitats along Lindsey slough. The dense ruderal herbaceous vegetation within the Project Area provides suitable nesting habitat for ground or low-lying vegetation nesting special-status species (including yellow warbler [*Setophaga petechia*], yellow-breasted chat [*Icteria virens*], Modesto song sparrow [*Melospiza melodia*], western burrowing owl [*Athene cunicularia hypugaea*], and migratory birds).

A few special-status species may use the Project Area or vicinity for foraging only, including the American white pelican (*Pelecanus erythrorhyncos*), bald eagle (*Haliaeetus leucocephalus*), northern harrier (*Circus hudsonius*), golden eagle (*Aquila chrysaetos*), as well as greater and lesser sandhill crane (*Grus canadensis tabida* and *Grus canadensis canadensis*, respectively). Foraging habitat may be disturbed temporarily during Project construction by the removal of vegetation. While these actions may lower the quality of foraging habitat for some species, the impacts will be temporary. Foraging birds can easily disperse away from Project-related disturbances, and the presence of extensive alternative foraging habitat of similar value means the impact on foraging birds and habitat will be less than significant.

Implementation of mitigation measures **MM-3, MM-7, MM-8 and MM-9** include providing environmental awareness training, conducting preconstruction surveys, and establishing no-disturbance buffers as relevant to minimize the potential for direct impacts on nesting birds. Additionally, mitigation measure **MM-1** will mitigate for Project-related vegetation removal and associated habitat loss. Therefore, Project-related impacts to special-status and migratory birds, will be less than significant.

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

A temporary irrigation ditch was present at the landside levee toe during vegetation mapping. This ditch is periodically relocated by the landowner as part of regular agricultural activities and will be moved prior to Project activities. Vegetation has recruited along the temporary irrigation ditch in its present location (1.10 acres of the hardstem and California bulrush marshes, 0.11 acre of red willow riparian woodland and forest areas); however, those communities will not be present upon Project construction. The Project will ensure long-term stability of these habitat types across Egbert Tract, as it will prevent levee failure that could result in larger scale habitat losses.

Project construction will require the removal of non-native trees on the landside levee slope. Per **MM-1**, trees will be replaced at a 1:1 ratio for non-native species and 2:1 ratio for native species. With the inclusion of mitigation measures, potential impacts to riparian habitat will be less than significant.

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

No state or federally protected wetlands are present within the Project Area; therefore, no impacts to state or federally protected wetlands will occur as a result of the Project.

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

The Project includes modifications to existing levee infrastructure, but it will not include construction of any new elements that will block fish or wildlife movement post-Project.

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

The Project will not conflict with any existing local policies or ordinances protecting biological resources. Implementation of **MM-1** will mitigate for necessary tree removal.

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

The Project will not conflict with any provisions of an adopted or approved (local, regional, or state) Habitat Conservation Plan or Natural Community Conservation Plan. The Project does not conflict with the purpose or goals of the Solano Multispecies Habitat Conservation Plan (developed by the Solano County Water Agency in 2012), which promotes the conservation of biological diversity and preservation of endangered species (and their habitats) to provide a healthy economic environment (for citizens, agriculture, and industries) and allow for the ongoing maintenance and operation of public and private facilities (Solano County Water Agency 2012).

2.5 Cultural Resources

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
Would the Project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	❑	❑	❑	✓
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	❑	✓	❑	❑
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	❑	✓	❑	❑

2.5.1 Environmental setting

Natural Investigations, Inc. (Natural Investigations), conducted cultural resources investigations for the Project Area and a 0.5-mile radius around it. These investigations are documented in a report titled *Cultural Resource Assessment for the Lindsey Slough Levee Rehabilitation Project Solano County, California* (NIC 2025) that includes a search of the California Historical Resources Information System (CHRIS) conducted by the North Northwest Information Center, a search of the NAHC's Sacred Lands File, outreach to Native American Tribes and individuals identified on a contact list provided by NAHC, a buried archaeological site sensitivity analysis, and a pedestrian surface survey of the entire Project Area.

2.5.1.1 Results of Cultural Resources investigations

The CHRIS records search was completed on March 25, 2025 (File Nos.: 24-1368), and identified three previously recorded cultural resources—P-48-001027, P-48-002019, and P-48-

002020—in the Project Area. The NAHC's Sacred Lands File search was completed on March 5, 2025, and was negative. In response to the Native American outreach letter, Natural Investigations received an e-mail on March 14, 2025, from Lucy Gill, the Cultural Resources Manager of the Confederated Villages of Lisjan Nation, requesting formal consultation. On March 17, 2025, an email was received from the Cultural Preservation Department of the Wilton Rancheria that requested notification of any changes or updates to the Project.

The buried site sensitivity analysis determined that the Project Area and surrounding area of the Lindsey Slough levee system has a low probability for buried cultural deposits. The flattening and recompacting of the landside levee slope during Project construction will occur completely within introduced fill soils and does not have the potential to reach native soils. In addition, the native soils have likely been significantly disturbed by the construction of the levee, the previous introduction of fill soils, the use of heavy machinery, and related construction activities.

Natural Investigations' professionally qualified archaeological staff conducted a pedestrian surface survey of the entire Project Area on March 18, 2025, using transects spaced no greater than 15 meters apart. Pedestrian survey identified one isolated precontact chert flake and updated the site record for P-48-002020, which has been previously determined not eligible for the National Register of Historic Places and California Register of Historical Resources (CRHR). The State Historic Preservation Officer has concurred with the not eligible determination for the site.

2.5.2 Findings

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

Cultural resources investigations determined that the updated portions of site P-48-002020 do not meet the criteria for inclusion in the CRHR. In addition, the previously recorded portions of P-48-002020 have been concurred as not eligible. Consequently, Project activities will not impact or cause a substantial adverse change in the significance of historical resources.

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

Cultural resources investigations did not identify any unique archaeological resources within the Area of Potential Effects (APE), and the sensitivity of the area for buried archaeological resources is very low. A single isolated flake was observed, but isolated finds are typically not eligible for inclusion in the CRHR. All Project activities will occur in non-native fill soils that have been previously disturbed with the construction of the levee system. Consequently, it is not anticipated that the Project will impact any unique archaeological resources. There is always a potential for inadvertently discovering unique archaeological resources that were included in the non-native fill soils. If an inadvertent discovery were to occur, it could result in a potentially significant impact on a unique archaeological resource. Implementation of mitigation measure **MM-10** will reduce any potential impacts to an inadvertently discovered significant archaeological resource to a less than significant level.

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

The Sacred Lands File search conducted for the APE was negative, and cultural resources investigations did not identify any human remains or evidence to suggest the presence of human burials within the Project Area. All Project activities will occur in non-native fill soils that have been previously disturbed with the construction of the levee system. Consequently, it is not anticipated that the Project will impact any human remains, but there is a potential for encountering previously undiscovered human remains during implementation of the Project. If an inadvertent discovery of human remains were to occur, it could result in a potentially significant impact on the remains. Implementation of mitigation measure **MM-11** will reduce any potential impacts to inadvertently discovered human remains to a less than significant level.

2.6 Energy

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
Would the Project:				
a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?	❑	❑	✓	❑
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	❑	❑	❑	✓

2.6.1 Environmental setting

Energy sources are either renewable (e.g., solar, wind) or nonrenewable (e.g., fossil fuels) and can be converted to electricity as a secondary energy source or combusted to power vehicles and equipment.

In 2022, California consumed more energy than all other states, except Texas, but its per capita consumption of 176 million British thermal units was the third lowest in the nation (USEIA 2025). The California Energy Commission, established by the Warren-Alquist Act in 1975 (Section 6.2), has been instrumental in limiting California's energy consumption, particularly via instituting energy efficiency standards that are updated every 3 years in Title 24 (CEC 2025).

The Project will use fossil fuels, a nonrenewable energy source, to power construction vehicles and equipment. The fossil-fuel consumption will be short term, only during construction, and will not persist upon Project completion. No electricity consumption will be associated with the Project.

2.6.2 Findings

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

Project construction equipment and vehicles will use fossil fuels for power. BMPs included in conservation measure **CM-1** will ensure that construction equipment is used as efficiently as feasible (e.g., by limiting idling) (Section 1.4.5). Fossil fuel consumption will be short term , only during construction, and will not persist upon Project completion. No electricity consumption will be associated with the Project. Therefore, Project impacts will be less than significant.

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

The Solano County General Plan includes policies to promote renewable energy use and energy efficiency. In accordance with policy RS.P-54 and implementation program RS.I-48, Project construction will use vehicles model year 2010 or newer, and diesel-fueled construction equipment will be operated in compliance with CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation (conservation measure **CM-1**, Section 1.4.5). Other state and local plans such as California Title 24 Building Energy Efficiency Standards and the Solano County General Plan establish energy efficiency standards for actions (e.g., new building construction, retrofitting existing developments) that are not associated with the Project. Consequently, the Project will not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

2.7 Geology and Soils

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
Would the Project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault?	❑	❑	❑	✓
ii) Strong seismic ground shaking?	❑	❑	❑	✓
iii) Seismic-related ground failure, including liquefaction?	❑	❑	❑	✓
iv) Landslides?	❑	❑	❑	✓
b) Result in substantial soil erosion or the loss of topsoil?	❑	❑	✓	❑

Issues	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 on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	❑	❑	❑	✓
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	❑	❑	✓	❑
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	❑	❑	❑	✓
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	❑	❑	❑	✓

2.7.1 Environmental setting

The Project Area lies within the Great Valley geomorphic province, which is crossed by few faults; however, it is bordered by the Coast Range province, which contains several active fault zones that predominately exhibit right-lateral, strike-slip motion. The closest active faults[2] designated by the California Geological Survey are the Greenville Fault Zone and Green Valley–Concord Fault Zone, located about 21 and 23 miles to the southwest, respectively (CGS 2018, 2022). The closest potentially active fault is the Midland Fault Zone, which runs north-south through the Delta and intersects the Project Area (Unruh and Hitchcock 2009). The most recent displacement along this fault is estimated to be early to mid-Quaternary (0.7–2.6 million years before present) (CGS 2010).

The Greenville and Green Valley–Concord faults both have estimated slip rates of 1–5 millimeters per year (Bryant and Cluett 2002a,b). USGS estimates a 16% probability of an earthquake of magnitude 6.7 or greater occurring on either of these fault systems by the year 2043 (Aagaard et al. 2016). In general, ground-rupture hazards do not affect Solano County. Delta islands are, however, susceptible to liquefaction because of the presence of shallow groundwater and sandy-peaty soils with low cohesive strength (CGS 2018, San Joaquin County 1992). Liquefaction or seismically induced waves (i.e., seiches) in Delta channels may damage levees on Delta islands (San Joaquin County 1992).

The northeastern portion of Egbert Tract (near Lindsey Slough) is composed of peat and mud of tidal wetlands and waterways. These deposits accumulated throughout the Holocene (<11,000 years before present) atop sand and eolian deposits from the Pleistocene-age Modesto Formation (Atwater 1982a,b; USGS 2002). This process of tidal marshland formation occurred throughout

[2] An *active fault* is defined by the California Geological Survey as a fault having surface displacement within the Holocene epoch, or the past 11,700 years (CGS 2018).

the Delta region until land reclamation began in the late 1800s during Euro-American settlement (Whipple et al. 2012). By the 1930s, draining of marshes and wetlands and extensive levee construction transformed the Delta into an agricultural landscape. These changes in land use allowed for microbial oxidation and depletion of peat, resulting in land-surface subsidence of up to 26 ft below sea level on Delta islands (Drexler et al. 2009).

Two soil borings were completed adjacent to the landside levee toe in 2024. Subsurface materials encountered at the site consisted of original levee fill material dredged from the nearby river channel, clay, organic clay, lean clay, and sand (Shannon & Wilson 2024).

2.7.2 Findings

a) Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault?

The Project Area is not located within the Alquist-Priolo Earthquake Fault Zone (CGS 2022) or a California Earthquake Hazards Zone (California DOC 2024). The Project will not result in operational or land use changes that will cause substantial adverse impacts due to potential rupture of an earthquake fault. Therefore, the Project will not impact any known earthquake fault.

ii) Strong seismic ground shaking?

The Project Area is not located near active faults and therefore lies in a zone with low potential for strong seismic ground shaking. The Project will not increase the potential for direct or indirect adverse impacts related to seismic ground shaking.

iii) Seismic-related ground failure, including liquefaction?

The Project Area lies in the Delta, which is potentially susceptible to seismically induced liquefaction that could result in levee failure and flooding. The Project will not increase the potential for direct or indirect adverse impacts due to seismic-related ground failure.

iv) Landslides?

Except for the levees surrounding the tract, Egbert Tract has flat topography and is not susceptible to landslides. The Project aims to fix a damaged portion of the Lindsey Slough levee embankment that is in a failed state. As described in Section 1.4, the purpose of the Project is to maintain levee integrity and provide long-term flood protection to Egbert Tract. Therefore, the Project will not increase the potential for direct or indirect adverse impacts related to landslides.

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

The Project will remove topsoil during excavation of the levee slope and stripping, clearing, and grubbing activities. During these activities, there will be a minor and temporary increase in the

potential for stormwater-related erosion due to exposed surficial soil. To minimize the risk of soil erosion, the Project will implement BMPs in conservation measure **CM-3** (Section 1.4.5) (e.g., limiting construction activities to dry periods). The levee embankment will be reconstructed to a finish grade of 4:1 (horizonal:vertical) by placing and compacting levee fill material, and any areas with bare ground will be re-seeded with a native seed mix. Ultimately, these activities will stabilize the levee and reduce the potential for soil erosion; therefore, impacts of the Project on soil erosion and loss of topsoil will be less than significant.

c) Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Although the Project Area is located on Quaternary Delta mud and peat deposits, which are susceptible to liquefaction, the Project will not result in increased potential for liquefaction. The Project will improve levee integrity and will not increase susceptibility to hazards associated with unstable geologic units.

d) Would the Project 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?

Soils in the vicinity of the Project (i.e., peat and organic materials) are expansive. The Project has, however, been designed to address the potential for expansive soil. Expansive soils will not be used to re-construct the Lindsey Slough levee. Imported fill material will comply with the following: a minimum of 20% passing the No. 200 standard sieve on each individual test, a maximum particle size of 2 inches, a plasticity index no lower than 8, a liquid limit less than 45, and fill material free of organic materials. Soil will be placed in the excavation in lifts and will be properly compacted. The Project will not increase long-term deformation or risks to life and property compared to existing conditions. Therefore, potential impacts from the Project being located on and/or using expansive soils will be less than significant.

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

The Project will not use septic tanks or alternative wastewater disposal systems. Therefore, the Project will not impact any on-site wastewater disposal system.

f) Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No unique paleontological resources or geologic features are documented on Egbert Tract. Due to their relatively young age, the Holocene muds and peats that cover much of the tract are generally considered to have low potential for the presence of fossils. None of the geologic units known to contain fossils in the Delta, including the Franciscan, Mehrten, Modesto, or San Pablo formations, have been mapped on the surface within the Project Area. Additionally, all Project excavation work will occur in levees composed of imported fill material, rather than in naturally deposited soils. The Project will not impact unique paleontological resources or geologic feature.

2.8 Greenhouse Gas Emissions

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
Would the Project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	❑	❑	✓	❑
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	❑	❑	❑	✓

2.8.1 Environmental setting

GHGs can absorb and emit infrared radiation, trapping energy in the atmosphere and causing it to warm. GHGs have impacts that are more global than regional, unlike air pollutants that impact only the general area near where they are released. GHGs can occur naturally or as a direct result of human activities. State law defines GHGs to include the following emissions: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride (Health and Safety Code § 38505(g)). The most common GHG resulting from human activity is carbon dioxide, followed by methane and nitrous oxide.

Assembly Bill (AB) 32 (Section 6.2), the Global Warming Solutions Act of 2006, went into effect in January 2008. This bill required a statewide GHG emissions limit, equal to the 1990 level of 431 million metric tons of carbon dioxide equivalent (MMTCO2e), to be achieved by December 31, 2020.

California's GHG emissions have generally decreased after peaking in 2004, remaining below the AB 32 2020 GHG emissions limit since 2014 (CARB 2024b). California's current climate targets include meeting both the Senate Bill 32 (Section 6.2) emissions target, which includes reducing emissions by 40% below 1990 levels by 2030, and the AB 1279 (Section 6.2) emissions target, which expanded upon AB 32 by aiming to reduce anthropogenic emissions 85% below 1990 levels by 2045 and achieve carbon neutrality (CalEPA 2025).

In 2022, California's GHG emissions from statewide emitting activities were 371.1 MMTCO2e, which is 9.3 MMTCO2e (2.4%) lower than 2021 levels (CARB 2024c). This continued the long-term trend of declining GHG emissions in California, except for anomalous trends during 2019 to 2021 due to the COVID-19 pandemic. From 2000 to 2022, the carbon intensity of California's economy (carbon pollution per million dollars of gross state product) decreased by 54.8%, and emissions per gross state project declined by 3.1% from 2021 to 2022 (CARB 2024c). The transportation sector consistently emits more GHG than any other sector, accounting for almost 38% of state GHG emissions in 2022. When upstream emissions from oil extraction, petroleum refining, and oil pipelines in California are included in this metric, transportation is responsible for 48.0% of statewide emissions in 2022 (CARB 2024c).

The YSAQMD has not established a numerical threshold of significance for assessing impacts associated with Project GHG emissions but recommends evaluation of incremental impacts to determine whether they may be cumulatively considerable (YSAQMD 2007). The YSAQMD and the Solano County Climate Action Plan also provide GHG emission reduction measures and actions that can be implemented to limit potential Project impacts consistent with state and county emissions goals (Solano County 2011).

2.8.2 Findings

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

Project construction is expected to generate 487 metric tons of carbon dioxide equivalent between May and November 2025, as indicated by the CalEEMod results in Appendix A. The Project will not result in changes to long-term GHG emissions following construction. Therefore, short-term impacts involving the generation of GHG emissions during Project construction will be less than significant.

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

Emissions associated with Project construction will be temporary and will not inhibit attainment of the statewide GHG emissions limit established by AB 1279, as described in Section 6.2. The YSAQMD has not established quantitative significance thresholds for GHG emissions, but the YSAQMD and the Solano County Climate Action Plan recommend emission reduction measures consistent with long-term state and county emissions goals. Although most recommended measures apply to development projects or ongoing operational (e.g., industrial, commercial) uses rather than construction activities, the Project will incorporate measures where possible to limit GHG emissions and protect GHG storage (i.e., carbon sequestration) during or following construction activities (e.g., implementing reduced idling times as stipulated in **CM-1**, re-seeding bare soil with a native seed mix following construction activities as stipulated in **CM-3** [Section 1.4.5). The Project will not result in changes to long-term GHG emissions following construction. For the reasons described above, the Project will not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions; therefore, the Project will not increase GHG emissions.

2.9 Hazards and Hazardous Materials

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

2.9.1 Environmental setting

Land uses surrounding the Project Area are predominantly agricultural, recreational, and open space, along with some residential use. These areas have the potential to contain hazardous substances, particularly petroleum products or pesticides that may have been stored nearby or released into the surrounding environment. Older gas wells and underground storage tanks used to store petroleum products and other hazardous materials may develop leaks that can lead to the contamination of soil or groundwater. A query of the California Department of Toxic Substances Control's database revealed no known sites having cleanup, permitted, or other hazardous materials statuses within the Project Area (CDTSC 2025).

2.9.2 Findings

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

Hazardous materials (e.g., diesel fuel) will be used by construction equipment during Project implementation. To minimize the risk of a hazardous material release, the Project will implement hazardous material BMPs, as outlined in conservation measures **CM-4** and **CM-5** (Section 1.4.5). All fuels and other hazardous materials will be handled and stored according to the manufacturer's specifications. A containment area will be established for construction equipment staging, and the ground will be protected from potential contamination within the containment area. In the event of a spill, crew personnel will stop the spillage at its source, contain the spilled material, and notify Project supervisors and appropriate agency representatives.

The Project will have no potential impacts associated with hazardous material use following Project completion. Impacts related to the transport, use, or disposal of hazardous materials will be less than significant with compliance with applicable regulations and incorporation of conservation measures **CM-4** and **CM-5**.

b) Would the Project 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?

As stated above, implementation of hazardous material BMPs outlined in conservation measures **CM-4** and **CM-5** (Section 1.4.5) will occur during Project implementation; therefore, the potential for the Project to create a significant hazard that could impact the public or environment will be less than significant.

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

The Project will not impact schools because no schools are currently located, or proposed to be constructed, within 0.25 mile of the Project Area.

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

No portion of the Project Area is included on a list of hazardous materials sites (CDTSC 2025); therefore, the Project will not impact the public or environment by posing risk of exposure to hazardous materials pursuant to Government Code § 65962.5.

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 use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project Area?

No public airports are located within 2 miles of the Project Area. The Project Area is within Zone D of the Travis Air Force Base Airport Influence Area and within the Assault Landing Zone (ALZ) Training Overlay Zone, both of which are covered by the Travis Air Force Base Land Use Compatibility Plan (Coffman Associates 2024a). The Project is compatible with the Zone D and

ALZ Training Overlay Zone criteria and will not include any prohibited activities (i.e., hazards to flight). The Project Area is also approximately 11 miles from Travis Air Force Base's nearest facilities (i.e., runway) where safety hazards and excessive noise will most likely occur due to the higher concentration of planes and associated equipment and materials. Given this distance, Project construction workers are not expected to be exposed to safety hazards or excessive noise from operations at Travis Air Force Base or the occasional flight over the Project Area.

The Project's haul route along Liberty Island Road is within the Rio Vista Municipal Airport Influence Area Zones 6 and 7 covered by the Rio Vista Municipal Airport Land Use Compatibility Plan (Coffman Associates 2024b). Truck traffic through these zones is compatible with the criteria and prohibited uses (i.e., hazards to flight, wildlife hazard attractants) outlined in the plan. Although truck traffic along the Project's haul route will increase for a limited time (i.e., 9 to 12 weeks) during the day (i.e., 7:00 a.m. to 7:00 p.m.), the Project will not create excessive noise; therefore, any Project-related noise impacts will be less than significant.

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

In the event of an emergency, residents of Egbert Tract, located in the SOL-3158 evacuation zone, will evacuate using routes that do not cross the Project Area. All roadway traffic supporting the Project will adhere to applicable laws for motor vehicles and with Solano County's Office of Emergency Services. The construction contractor will comply with local fire, police, and medical responders during any emergency. Therefore, the Project will not interfere with emergency response plans or disrupt emergency evacuations.

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

Egbert Tract has been designated by the California Department of Forestry and Fire Protection (CalFire) as an unzoned local responsibility area[3] with no moderate, high, or very high fire hazard severity zones (CalFire 2023). Accordingly, the Project will not impact people or structures by exposing them a significant risk of loss, injury, or death involving wildland fires. In addition, the Project will implement conservation measure **CM-6** (Section 1.4.5) to reduce the potential for a grass fire.

[3] Local responsibility areas are lands on which neither the state nor the federal government has any legal responsibility for providing fire protection.

2.10 Hydrology and Water Quality

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
Would the Project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	❑	❑	✓	❑
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?	❑	❑	❑	✓
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
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 off-site;	❑	❑	❑	✓
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	❑	❑	❑	✓
(iv) impede or redirect flood flows?	❑	❑	❑	✓
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?	❑	❑	❑	✓
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	❑	❑	❑	✓

2.10.1 Environmental setting

The Project Area is entirely within the Watson Hollow hydrologic unit (Hydrologic Unit Code 180201630605) and borders the Lindsey Slough hydrologic unit (Hydrologic Unit Code 180201630604) within the larger Lower Sacramento River watershed (Hydrologic Unit Code 18020163) (USGS 2025). Rehabilitation is only occurring on the land side of the levee, and no waterways are present within the Project Area. The northern end of a drainage canal is connected to and flows into Lindsey Slough adjacent to the Project Area, but neither waterway intersects the Project Area. Lindsey Slough flows into Cache Slough at its easternmost end, and Cache Slough flows into the Sacramento River approximately 5 miles southeast of the Project Area (USACE 2025b). Lindsey Slough is included on the list of Traditional Navigable Waters maintained by the USACE Sacramento District (USACE 2025b).

The Project Area experiences a Mediterranean climate characterized by hot, dry summers and cool, wet winters. Average annual rainfall within the Project Area between 1991 and 2020 was 18.5 inches. Rainfall typically occurs between October and April (PRISM Climate Group 2025). Water levels in the adjacent waterways fluctuate daily with tidal action and episodically during flood events coinciding with periods of heavy precipitation and runoff. The Project Area is currently mapped by the Federal Emergency Management Agency as a high-risk flood zone (FEMA 2025).

There are no tsunami risks within the Project Area or vicinity according to the State of California's tsunami hazard area map (California DOC 2025c). Earthquakes along any of the active fault zones in the vicinity of the Project (Section 2.7.1), however, could result in seiches in the waterways in the vicinity of the Project Area.

Water quality objectives and beneficial uses for surface water and groundwater are in the Water Quality Control Plan for the Central Valley (Basin Plan) (Central Valley RWQCB 2019). The water quality objectives apply to all surface waters in the Sacramento and San Joaquin River basins, including the waterways near the Project Area (i.e., Lindsey Slough). Existing and potential beneficial uses for the Delta include municipal and domestic supply, agricultural supply (irrigation and stock watering), industrial supply (process and service), recreation (contact and noncontact), freshwater fish habitat (warm and cold), migration (warm and cold), spawning (warm), wildlife habitat, and navigation. In accordance with Section 303(d) of the Clean Water Act, the Delta waterways (northwestern portion), including the waterways near the Project Area, have been classified as *impaired* by the State Water Resources Control Board (SWRCB) (SWRCB 2024). This designation, as specified in the Basin Plan, is assigned to waterbodies where established water quality objectives are not being met or where beneficial uses are not protected. SWRCB has classified the Delta waterways (northwestern portion) as *impaired* for electrical conductivity, mercury, pesticides (chlorpyrifos, diazinon, dichlorodiphenyltrichloroethane [DDT], and group A pesticides), toxicity, and invasive aquatic species (SWRCB 2024). Lindsey Slough itself is classified as *impaired* for the pesticide groups chlorpyrifos and pyrethroids. Classification of a waterbody as *impaired* on the 303(d) list triggers the development of a pollution control plan, called a Total Maximum Daily Load. The Total Maximum Daily Load for each water body and associated pollutant serves as the means to attain and maintain water quality standards for the *impaired* water body.

2.10.2 Findings

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

The Project will include no in-water work. No waterways are located within the Project Area, and excavation will only occur on the landside levee slope. However, ground disturbance during Project construction could temporarily increase the potential for localized erosion and sediment-laden stormwater runoff. An SWPPP with BMPs will be implemented to minimize the potential for soil erosion and stormwater runoff (conservation measure **CM-3**, Section 1.4.5) and accidental spills of hazardous materials to enter waterways and groundwater (conservation measures **CM-4** and **CM-5**). With implementation of conservation measures **CM-3** through **CM-5**, impacts to surface or ground water quality will be less than significant.

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

The Project will not impact or alter existing groundwater pumping rates or natural recharge potential.

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

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

During Project construction, movement of earth and fill material will temporarily disturb soils and alter runoff patterns over a small area on the landside levee slope. Appropriate BMPs included in the Project SWPPP will be implemented to minimize potential temporary impacts to waters from erosion during Project construction (conservation measure **CM-3**, Section 1.4.5). The topography of the Project Area will be reconstructed to similar grades and revegetated following Project construction, and no new impervious surfaces will be created. Therefore, there will be no substantial long-term change in erosion or siltation on-site or offsite. The Project will have a less-than-significant impact related to erosion and siltation.

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

The Project will not substantially alter drainage patterns following construction. Earth-moving activities during construction have the potential to cause minor and temporary alterations to the Project Area's existing drainage patterns but will not result in an increased risk of flooding. The Project will not result in flooding impacts to locations within the Project Area or off-site areas.

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?

The Project will not create or contribute runoff water or provide additional sources of polluted runoff.

iv) impede or redirect flood flows?

Project construction will be completed during late summer or early fall when precipitation and flood risk are extremely low. Construction will occur on the land side of the levee and will not impede or redirect flows in adjacent waterways. Project implementation will not result in long-term changes to flood flow patterns.

d) In flood hazard, tsunami, or seiche zones, would the Project risk release of pollutants due to Project inundation?

The Project Area is not at risk of tsunamis. In the unlikely event of a flood or seiche during Project construction (see Section 2.10.1), implementation of hazardous material BMPs included

in the SWPPP (conservation measures **CM-4** and **CM-5**, Section 1.4.5) will minimize the risk of a pollutant release. The Project will not risk release of pollutants following Project construction.

e) Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The Project will not conflict with or obstruct the implementation of the Basin Plan (Central Valley RWQCB 2019) or any sustainable groundwater management plan (Solano Collaborative 2021) because it will not chronically lower groundwater levels, reduce groundwater storage, or degrade water quality by increasing concentrations of constituents of concern (nitrate, arsenic, chloride, total dissolved solids, or hexavalent chromium). The Project will have no impact.

2.11 Land Use and Planning

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
Would the Project:				
a) Physically divide an established community?	❑	❑	❑	✓
b) Cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	❑	❑	❑	✓

2.11.1 Environmental setting

The land-use designation for Egbert Tract under the Solano County General Plan (Solano County 2008) is *agriculture*, and this designation includes areas for the practice of agriculture as the primary use and allows for secondary uses that support the viability of agriculture. The tract falls within the Elmira and Maine Prairie agricultural region (Solano County 2008) and contains areas of Grazing Land, Farmland of Statewide Importance, and Prime Farmland (Section 2.2.1).

Egbert Tract is also part of the Delta Primary Zone, as defined by the Delta Protection Act of 1992 (Section 6.2). The Primary Zone includes approximately 500,000 acres of waterways, levees, and farmed lands throughout five counties (DPC 2010). The Land Use and Resource Management Plan for the Primary Zone of the Delta guides planning for the conservation and enhancement of the natural resources of the Delta, while sustaining agriculture and meeting increased recreational demand (DPC 2010).

Egbert Tract is located within the boundary covered by the Delta Plan, a comprehensive, long-term management plan for the Delta and Suisun Marsh mandated by the 2009 Delta Reform Act (Section 6.2) (Delta Stewardship Council 2024). The Delta Plan includes recommendations for achieving the coequal goals of protecting and enhancing the Delta ecosystem and its unique agricultural, cultural, and recreational characteristics, while providing for a more reliable water supply for California. Delta Plan Policy DP P2 reflects these goals by requiring that local land uses be considered when choosing placement of water or flood facilities or restoring habitats.

2.11.2 Findings

a) Would the Project physically divide an established community?

No established communities are located on Egbert Tract, and the Project will not change the character of or access to any of the residences or farm buildings on the tract; therefore, the Project will not impact or divide any established community.

b) Would the Project 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?

The Project will not result in any long-term changes to land use on Egbert Tract; therefore, it will not conflict with any goals or policies in the Solano County General Plan (Solano County 2008), the Land Use and Resource Management Plan for the Primary Zone of the Delta (DPC 2010), or the Delta Plan.

2.12 Mineral Resources

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
Would the Project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	❑	❑	❑	✓
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	❑	❑	❑	✓

2.12.1 Environmental setting

Few mineral resources of economic value are found in the Delta. Extraction of peat and sand-gravel occurs on some Delta islands. No mineral extraction activities currently occur on Egbert Tract. To date, land on Egbert Tract has not been classified into mineral resource zones, as pursuant to the California Surface Mining and Reclamation Act of 1975 (Section 6.2) (Solano County 2008, CGS 2020).

2.12.2 Findings

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

No known mineral resources are present within the Project Area; therefore, the Project will not impact the availability of mineral resources.

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

No known mineral resources are present within the Project Area; therefore, the Project will not conflict with any local general plans, specific plans, or other land use plans and will not impact any locally important mineral resource recovery site.

2.13 Noise

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
Would the Project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	❑	❑	✓	❑
b) Generation of excessive groundborne vibration or groundborne noise levels?	❑	❑	✓	❑
c) For a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project Area to excessive noise levels?	❑	❑	❑	✓

2.13.1 Environmental setting

2.13.1.1 Noise

Noise can be defined as unwanted or disruptive sound. Pressure waves traveling through air exert a force that is perceived by the human ear as sound, measured in decibels (or dB) using monitoring instruments. For context, a whisper measures approximately 30 dB, normal speaking is about 60 dB, and a chain saw is around 110 dB (CDC 2015). Prolonged exposure to noises above 70 dB can lead to adverse impacts, such as hearing loss. Noise levels from localized (i.e., point) sources attenuate with distance at a rate of approximately 6 dB per doubling of distance (FTA 2018). Construction noise levels are often expressed in A-weighted decibels (or dBA), a unit that incorporates frequency adjustments to model the human ear's varying sensitivity to different sound frequencies.

Noise within the Project Area is primarily from boat traffic along adjacent waterways, recreational activities (e.g., hunting), routine use of agricultural equipment, and vehicular traffic Liberty Island Road. The noise-sensitive receptors nearest to the Project Area are the few semi-permanent rural residences approximately 200 ft south of the Project Area, and two additional

rural residences on the opposite side of Lindsey Slough on Hastings Island, approximately 0.25 mile from the Project Area. Other rural residences in the vicinity are greater than 1 mile from the Project Area.

The Solano County Code (Section 28.70.10) outlines general development standards and restricts noise levels to a maximum of 65 dBA at any property line and prohibits offensive vibrations that are detectable beyond any property line. Due to the remote location, ambient noise levels near the levee are limited to the use of heavy equipment (e.g., tractors and harvesters) for routine agricultural and maintenance activities. Average noise levels for this type of farm operational equipment typically range from 75 to 93 dB at the source (Depczynski et al. 2005). Construction activities associated with the Project may exceed the Solano County noise limit of 65 dBA at the nearest property line, as outlined in Solano County Code § 28.70.10; however, the neighboring property owners are the same entity that owns the Project Area and/or supportive of the Project. To reduce noise impacts to the nearest noise-sensitive receptor, work expected to exceed this threshold will be restricted to daytime hours (7:00 a.m. to 7:00 p.m.).

2.13.1.2 Vibration

Vibrations are periodic oscillations of a medium, including groundborne vibrations generated by machinery or construction equipment. These vibrations can lead to groundborne noise, which occurs when objects such as room surfaces resonate in response to ground vibrations. Vibrations are typically measured by their root mean squared velocity, expressed in vibration decibels (VdB). Vibrations become perceptible at approximately 65 VdB, distinctly perceptible around 75 VdB, and become bothersome around 85 VdB (FTA 2018).

Existing vibration levels are relatively low near the Project Area. Vibrations in the vicinity are primarily produced by vehicular traffic, including routine agricultural and maintenance vehicles and equipment.

2.13.2 Findings

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

Typical construction equipment noise levels for the Project are estimated to be between 55 and 85 dBA, 50 ft from the source (Table 2-7). Expected noise levels were also calculated at 200 ft from the equipment (i.e., the approximate distance to the nearest noise-sensitive receptor) (FTA 2018). The expected noise levels of Project construction equipment at a distance of 200 ft from the source will be no greater than 69 dBA (Table 2-7).

Table 2-7. Expected construction equipment noise levels and usage.

Equipment	Acoustical usage factor (%)[1]	Expected noise level (dBA) from 50 ft	Expected noise level (dBA) from 200 ft
Compactor	20	80	61
Dozer	40	85	69
Excavator	40	85	69
Motor grader	40	85	69
Backhoe	40	80	64
Scraper	40	85	69
Haul / water truck[2]	40	84	68
Pickup truck[3]	40	55	39

Source: FHWA (2017), FTA (2018)
Notes: dBA = A-weighted decibels
ft = feet
[1] Percentage of time equipment generates noise at the maximum level.
[2] Emission reference levels for dump trucks were used as a substitute for haul/water trucks.
[3] Estimated reference level for pickup trucks and water trucks.

Depending on the type of equipment, noise levels during Project implementation will at times exceed the Solano County noise limit of 65 dBA at the nearest property line. Given the neighboring properties are either owned by the same entity that owns the Project Area or are supportive of the Project and aware of its scope, this temporary increase in noise will have a less than significant impact. A few semi-permanent residences that are located approximately 200 ft away from the Project Area may temporarily experience noise above typical noise standards. To minimize disturbance related to noise, noise restrictions will be implemented, as outlined in conservation measure **CM-7** (e.g., construction activities that exceed exterior noise limits will be permitted only between 7:00 a.m. and 7:00 p.m.). Additionally, the Project will not result in a long-term increase in noise generation following construction; therefore, with the incorporation of conservation measure **CM-7**, the impact related to noise will be less than significant**.**

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

Vibration levels from heavy equipment and loaded haul trucks to be used during Project construction are not expected to exceed 94 VdB at a distance of 25 ft from the source, or 67 VdB at a distance of 198 ft from the source (i.e., the distance to the nearest noise-sensitive receptor) (FTA 2018). Vibrations first become perceptible at approximately 65 VdB, meaning the nearest sensitive receptor may be able to detect the vibrations of certain equipment (e.g., vibratory roller). However, no vibrations or sounds from other equipment used during Project construction are expected to be detectable at surrounding land uses, including the nearest sensitive receptor. No long-term increase in groundborne vibration generation will occur following Project construction. For these reasons, the Project will not result in the generation of excessive groundborne vibration; therefore, impacts from groundborne vibrations or sounds will be less than significant.

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?

The Project Area is within Zone D of the Travis Air Force Base Airport Influence Area and within the ALZ Training Overlay Zone, both of which are covered by the Travis Air Force Base Land Use Compatibility Plan (Coffman Associates 2024a). However, the Project Area is approximately 11 miles from Travis Air Force Base's nearest facilities (i.e., runway) where safety hazards and excessive noise will most likely occur from the higher concentration of planes and associated equipment and materials. Project construction workers are therefore not expected to be exposed to safety hazards or excessive noise from operations at Travis Air Force Base or the occasional flight over the Project Area. No public-use airports are located within 2 miles of the Project Area; therefore, the Project will not generate noise levels that will adversely impact people residing or working within the Project Area.

2.14 Population and Housing

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
Would the Project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	❑	❑	❑	✓
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	❑	❑	❑	✓

2.14.1 Environmental setting

The Project Area is in a rural area of Solano County with low population density. Land surrounding the Project Area is primarily agricultural with a few domestic residences located outside the Project boundary.

2.14.2 Findings

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

Although the Project will improve infrastructure along Lindsey Slough levee, it does not include any elements that will induce population growth. Therefore, the Project will not impact population levels.

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

The Project will not displace or impact any existing housing or necessitate the construction of replacement housing elsewhere.

2.15 Public Services

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	❑	❑	❑	✓
Fire protection?	❑	❑	❑	✓
Police protection?	❑	❑	❑	✓
Schools?	❑	❑	❑	✓
Parks?	❑	❑	❑	✓
Other public facilities?	❑	❑	❑	✓

2.15.1 Environmental setting

Egbert Tract is managed primarily for agriculture. No government facilities or public resources or services are present within the tract.

2.15.2 Findings

a) Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

Fire protection?
Police protection?
Schools?
Parks?
Other public facilities?

The Project will not impact fire protection services, police protection services, schools, parks, or other public facilities. None of these services have facilities on Egbert Tract, and access routes will be maintained to allow fire and police protection services to reach the residents and structures on Egbert Tract.

2.16 Recreation

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	❑	❑	❑	✓
b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	❑	❑	❑	✓

2.16.1 Environmental setting

The Delta waterways surrounding Egbert Tract are a recreational resource for boating, fishing, wildlife viewing, and hunting. The tract is accessible from the north via Hastings Island Road, from the south via Liberty Island Road, and from the west via Robinson Road and minor agricultural roads. Lindsey Slough can be accessed via a boat ramp located off Liberty Island Road northeast of the Project Area; however, public access to the boat ramp is limited by a locked gate.

The nearby Calhoun Cut Ecological Reserve can be accessed only by boat from Lindsey Slough and includes approximately 1,200 acres that are used for fishing and waterfowl hunting. On the opposite side of Lindsey Slough, the privately owned Hastings Island Hunting Preserve includes approximately 4,700 acres that are maintained for recreational upland bird (e.g., ring-necked pheasant [*Phasianus colchicus*], chukar [*Alectoris chukar*]) hunting.

2.16.2 Findings

a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

The Project will not alter or impact the use of existing neighborhood or regional parks or of the private hunting preserve on nearby Hastings Tract.

b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The Project does not require construction or expansion of recreational facilities that might have adverse, physical impacts to the environment.

2.17 Transportation

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
Would the Project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	❑	❑	❑	✓
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?	❑	❑	❑	✓
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	❑	❑	❑	✓
d) Result in inadequate emergency access?	❑	❑	❑	✓

2.17.1 Environmental setting

The Project Area can be accessed from the north via Hastings Island Road, from the south via Liberty Island Road, and from the west via Robinson Road. Liberty Island Road runs along the northeastern portion of the levee and provides entry to the Project Area. Public access to Liberty Island Road is restricted by District gates adjacent to the Project Area. Construction access within the Project Area will be on established roads, including through a District gate located at the northern terminus of Liberty Island Road. The Project will involve reconstructing the existing levee crest roadway and toe road. The Project will temporarily increase traffic in the Project vicinity during construction but will not result in long-term changes to any traffic or transportation circulation system.

2.17.2 Findings

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

The Project will not conflict with or impact a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

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

Automobile vehicle miles traveled are not expected to change due to the Project because no detours will be required during Project construction, and the Project will not change any transportation system.

c) Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The Project will not impact the design or use of roads in the vicinity.

d) Would the Project result in inadequate emergency access?

Emergency services will continue to have access to Egbert Tract from the north via Hastings Island Road, from the southwest and southeast via Liberty Island Road, and from the west via Robinson Road throughout Project construction. Project personnel, including haul truck drivers and equipment operators, will comply with laws and regulations associated with local fire, police, and medical responders during any emergency. Therefore, the Project will not impact access to emergency services.

2.18 Tribal Cultural Resources

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

2.18.1 Environmental setting

2.18.1.1 Ethnographic overview

The Project is located in the ethnographic territory of the Southern Wintun or Patwin, who are members of the widespread Penutian language family, which was prevalent throughout California during the late precontact and historic era (approximately 1800 Common Era) (Johnson 1978:350). Primary sources on the Patwin include the ethnographic accounts of Kroeber (1925,

1932), Powers (1877), and the testimony of Princess Isidora, wife of Chief Solano. There are also other secondary publications and overviews of the Patwin (cf., Cook 1976, Johnson 1978).

Many federally recognized Tribes are traditionally and culturally affiliated with the Project Area. The Tribes have deep spiritual, cultural, and physical ties to their ancestral land and are contemporary stewards of their culture and landscapes. The Tribal community represents a continuity and endurance of their ancestors by maintaining their connection to their history and culture. It is each Tribe's goal to ensure the preservation and continuance of their cultural heritage for current and future generations. The Confederated Villages of Lijan Nation wished for official consultation on the Project and the Wilton Rancheria asked for continued updates on the Project.

2.18.1.2 Results of Tribal resources investigation

The CHRIS records search was completed on March 25, 2025 (File Nos.: 24-1368), and it identified three previously recorded cultural resources—P-48-001027, P-48-002019, and P-48-002020—within the Project Area. The NAHC's Sacred Lands File search was completed on March 5, 2025, and was negative. In response to the Native American outreach letter, Natural Investigations received an e-mail on March 14, 2025, from Lucy Gill, the Cultural Resources Manager of the Confederated Villages of Lisjan Nation, requesting formal consultation. On March 17, 2025, an email was received from the Cultural Preservation Department of the Wilton Rancheria requesting notification of any changes or updates to the Project. None of the tribes or individuals contacted regarding the Project identified any culturally sensitive sites, resources, or tribal cultural resources within the Project Area.

Buried site sensitivity analysis determined that the APE and surrounding area of the Lindsey Slough levee system has a low probability for buried cultural deposits. Introduced fill soils will be used for the flattening and recompacting the of landside levee slope, the excavation work does not have the potential to reach native soils. In addition, the native soils were likely significantly disturbed during the construction of the levee.

Natural Investigations' professionally qualified archaeological staff conducted a pedestrian surface survey of the entire APE on March 18, 2025, using transects spaced no greater than 15 meters apart. Pedestrian survey identified one isolated precontact chert flake and updated the site record for P-48-002020, which was previously determined not eligible for the National Register of Historic Places and the CRHR. The State Historic Preservation Officer has concurred with the not eligible determination for the site.

2.18.2 Findings

a) Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

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

Cultural resources investigations for the Project identified one indigenous cultural resource, an isolated chert flake. An isolated find is usually defined as no more than

two historic or precontact artifacts found within a 30-meter radius. Isolated finds are typically not considered eligible for listing on the CRHP. If an isolated find is unique, it may be considered eligible for inclusion. The chert flake does not meet any criterion for inclusion in the CRHP and cannot be associated with a specific tribe. In addition, the search of the NAHC's Sacred Lands File was negative. Moreover, native soils have likely been significantly disturbed as described above, and Project activities will not affect native soils below introduced fill.

Mitigation measures **MM-10 and MM-11** describe environmental awareness training for construction personnel that will include tribal cultural resources and the process to mitigate the inadvertent find of a tribal cultural resource during excavation in the unlikely event one is found. The impact will, therefore, be less than significant with incorporation of mitigation.

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

As described above, Project activities will not affect native soils below introduced fill, and cultural resources investigations for the Project identified one indigenous cultural resource that cannot be associated with a specific tribe and is not eligible for listing in the CRHP.

Mitigation measures **MM-10 and MM-11** describe environmental awareness training for construction personnel that will include tribal cultural resources and the process to mitigate the inadvertent find of a tribal cultural resource during excavation in the unlikely event one is found. The impact will, therefore, be less than significant with incorporation of mitigation.

2.19 Utilities and Service Systems

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
Would the Project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	❑	❑	❑	✓
b) Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years?	❑	❑	❑	✓

Issues	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?	❑	❑	❑	✓
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	❑	❑	✓	❑
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	❑	❑	❑	✓

2.19.1 Environmental setting

No public wastewater treatment facilities, stormwater drainage facilities, or other public utilities or service systems are located on Egbert Tract. Wastewater is managed by private septic systems. Solid waste can be disposed of at landfills and recycling facilities in nearby cities (e.g., Rio Vista, Vacaville, Dixon). Pacific Gas and Electric Company provides electricity to Egbert Tract via local distribution lines.

The California State Legislature passed the Integrated Waste Management Act of 1989 (AB 939; Section 6.2) to minimize the disposal of solid wastes. AB 939 established the California Integrated Waste Management Board and required diversion of 25% of solid waste by 1995 and 50% by 2000. The California Integrated Waste Management Board's responsibilities transferred to the California Department of Resources Recycling and Recovery in 2010, and AB 341 (Section 6.2) was enacted in 2011, updating the statewide goal to 75% reduction by 2020. The Solano County Integrated Waste Management Plan outlines the ways in which Solano County will meet these goals (Solano County 2025).

2.19.2 Findings

a) Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

The Project will not impact any existing or require construction of new utility infrastructure, including water, wastewater, stormwater, electrical, natural gas, and telecommunication facilities.

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

The Project will not create a need for an increased water supply following construction. During construction, water trucks may source water from Cache Slough and/or Lindsey Slough. Based on the relatively small amount of water temporarily needed during construction, sufficient water will be available for construction activities. The Project will not create a need for an increased water supply following construction.

c) Would the Project 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?

The Project will not have an impact on wastewater generation or require the use of a wastewater treatment facility.

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

To the extent possible, fill removed during the levee excavation will be reused for levee reconstruction. Any remaining materials not suitable for use in levee construction, including plant material or trash generated during construction activities, will be recycled, if possible, or disposed of at an off-site waste facility, potentially Hay Road landfill. Because materials will be reused or recycled where feasible and solid waste will be only generated for a short period during construction, the Project will not generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. The Project impact from the generation of solid waste will be less than significant.

e) Would the Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

As indicated in item (d) above, the Project will comply with associated federal, state, and local management and reduction statutes and regulations by reusing or recycling materials when possible.

2.20 Wildfire

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	❑	❑	❑	✓
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	❑	❑	❑	✓

Issues	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?	❑	❑	❑	✓
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	❑	❑	❑	✓

2.20.1 Environmental setting

Within Solano County, the highest wildfire risk is in the western portion of the county where foothill or mountain areas have potentially large fuel loads. The Project Area consists of flat topography associated with agricultural uses and sloped topography due to the raised levee, and it primarily includes a cork oak forest bordered by waterways, access roads, and agriculture. CalFire has designated Egbert Tract as an *unzoned local responsibility area* with no moderate, high, or very high fire hazard severity zones (CalFire 2023).

2.20.2 Findings

a) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project substantially impair an adopted emergency response plan or emergency evacuation plan?

The Project Area is not located in or near a state responsibility area or on land classified as a very high fire hazard severity zone; therefore, it will not impact associated emergency response or evacuation plans.

b) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project 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?

The Project is not located in or near a state responsibility area or on land classified as a very high fire hazard severity zone. The Project will lessen the slope of the levee and will not include components that impact or exacerbate wildfire risk.

c) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

The Project is not located in or near a state responsibility area or on land classified as a very high fire hazard severity zone and will not require the installation of associated infrastructure that could impact or exacerbate the risk of wildfire.

d) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

The Project is not located in or near a state responsibility area or on land classified as a very high fire hazard severity zone. The Project will stabilize and reduce the slope of the levee and will not increase runoff or otherwise cause instability. Levee repairs will benefit the surrounding area including infrastructure and property by increasing flood protection.

2.21 Mandatory Findings of Significance

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

a) Does the Project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

As discussed in Section 2.4, the Project has the potential to impact special-status plant and wildlife species as well as their habitats within the Project Area. Impacts to these resources will be limited to a less than significant level with the incorporation of mitigation measures **MM-3** through **MM-9.**

As discussed in Sections 2.5 and 2.18, the potential for cultural or tribal cultural resources to be impacted by the Project is low; however, mitigation measures **MM-10** and **MM-11** describe mitigation for an unanticipated discovery of cultural or tribal cultural resources during the excavation.

Therefore, the Project will not substantially degrade the quality of the environment, substantially reduce the habitat of a wildlife species, cause a wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. Potential impacts to biological and cultural resources will be less than significant with incorporation of the mitigation measures described above.

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

The Project has been determined to have no impact on agriculture and forestry resources, land use and planning, mineral resources, population and housing, public services, recreation, transportation, and wildfire. Consequently, there is no potential for cumulatively considerable impacts to these resources.

The Project has been determined to have the potential for less-than-significant impacts to aesthetics, air quality, energy, geology and soils, GHG emissions, hazards and hazardous materials, hydrology and water quality, noise, and utilities and service systems temporarily during construction. The District will perform pipe replacements on Egbert Tract under the Deferred Maintenance Program for several months in both 2025 and 2026. In 2026, the timing of this activity will overlap with the Project construction. The two construction routes will be independent except for a portion of Liberty Island Road, and equipment and operating times will be similar. Because the Project has mitigation and conservation measures (Section 1.4) and is well below relevant thresholds (e.g., air quality [Table 2-4]), the two efforts will not result in cumulatively considerable impacts despite their concurrence. The Deferred Maintenance Program Project is covered by pending RWQCB 401, USACE 404, and CDFW Lake or Streambed Alteration Agreement permits, and a CEQA Categorical Exemption (RD 536 2025). BMPs and conservation measures associated with these permits will further reduce the potential for cumulative impacts. Additionally, the Project does not exceed the air quality and GHG thresholds that were determined by YSAQMD in consideration of the potential for cumulative impacts attributable to emissions from multiple projects occurring simultaneously. The potential for cumulatively considerable hydrology and water quality impacts will be minimized by implementation of a SWPPP during construction (conservation measures **CM-3** through **CM-5**); any nearby projects with the potential to impact surrounding waterways will also implement a SWPPP, as required by Clean Water Act Section 402. For these reasons, the Project will not have a cumulatively considerable impact on aesthetics, air quality, energy, geology and soils, GHG emissions, hazards and hazardous materials, hydrology and water quality, noise, or utilities and service systems.

In addition, and as described in item (a) above, implementation of mitigation measures (**MM-3** through **MM-11**) during construction (e.g., preconstruction surveys) will prevent impacts, which have the potential to be cumulatively considerable, to biological, cultural, and tribal cultural resources.

For the reasons described above, the Project will not have environmental impacts that are individually limited but cumulatively considerable; cumulative impacts will be less than significant with mitigation.

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

As discussed in this IS/MND, the Project, including conservation and mitigation measures that are incorporated into its design, will have no impact or a less-than-significant impact on aesthetics, agriculture, air quality, cultural resources, energy, geology and soils, GHG emissions, hazards or hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation, tribal cultural resources, utilities and services, and wildfire. As such, the Project's environmental impacts will not cause substantial, adverse impacts to humans, either directly or indirectly; impacts will be less than significant with mitigation.

3 DETERMINATION

On the basis of this 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 proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.	✓
I find that the Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.	❑
I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.	❑
I find that although the 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.	❑

4 LIST OF PREPARERS

The table below lists the preparers of this IS/MND and participants in the related planning, data gathering, and analytical tasks.

Name	Title	Affiliation	Project role
Tina Anderson	Senior Project Manager	MBK Engineers	Project management and support
Alli Hauger	Engineer	MBK Engineers	Engineering, Project design
Michael Kynett	Supervising Engineer	MBK Engineers	Engineering, Project design
Kirsten Pringle	Project Manager	MBK Engineers	Project management and support
Esther Adelstein	Scientist	Stillwater Sciences	Environmental analysis oversight
Elliott Allen	Environmental Scientist	Stillwater Sciences	Environmental analysis (geology, hydrology, mineral resources)
Carina Bilodeau	Botanist	Stillwater Sciences	Environmental analysis (biological resources—plants, wetlands and waters; wildfire)
Joelle CantoAdams	Botanist	Stillwater Sciences	Environmental analysis
Kayla Fitzpatrick	Environmental Scientist	Stillwater Sciences	Environmental analysis
AJ Keith	Senior Aquatic Ecologist	Stillwater Sciences	Environmental analysis oversight (biological resources—fish)
Christina Linkem	Fisheries Biologist	Stillwater Sciences	Environmental analysis (biological resources—fish)
Krista Orr	Senior Ecologist	Stillwater Sciences	Environmental analysis oversight, document preparation
Marissa Montjoy	Biologist	Stillwater Sciences	Environmental analysis (biological resources–wildlife)
Margie Pfeffer	Biologist	Stillwater Sciences	Environmental analysis, document preparation
Brianne Roxbrough	Wildlife Biologist	Stillwater Sciences	Environmental analysis, document preparation
Olivia Bowman, BA	Archaeologist	Natural Investigations Company	Cultural resources, tribal cultural resources
Joel Rudewicz, MA, RPA	Archaeologist	Natural Investigations Company	Cultural resources, tribal cultural resources

5 CONSULTATION AND COORDINATION

The Draft IS/MND was circulated to agencies, individuals, and/or organizations known to have a special interest in the proposed Project and was made available to the public for a 30-day review period. The public was notified as follows:

a) A Notice of Intent (NOI) to adopt an MND was posted for publication in a local newspaper and filed with the Solano County Clerk.

b) The proposed IS/MND, NOI, and Notice of Completion were electronically submitted to the State Clearinghouse for distribution.

c) The proposed IS/MND was distributed electronically by the State Clearinghouse to interested parties.

d) Copies of the proposed IS/MND were made available for public review at MBK Engineers offices in Sacramento.

6 COMPLIANCE WITH FEDERAL AND STATE ENVIRONMENTAL LAWS AND REGULATIONS

6.1 Federal

Clean Air Act. Section 176(c) of this act prohibits federal action or support of activities that do not conform to a State Implementation Plan. The Project is not expected to violate any air quality standard, increase air quality violations in the Project region, exceed the USEPA's general conformity *de minimis* threshold, or hinder the attainment of air quality objectives in the local air basin. The Project will have no adverse impact on the future air quality of the Project Area and is compliant with this act.

Clean Water Act (Sections 401 and 404). Section 404 of this act requires that a permit be obtained from USACE for fill of Waters of the United States, including wetlands, and Section 401 of this act requires a water quality certification or waiver from the Central Valley RWQCB for work in state jurisdictional waters. This Project does not require 404 or 401 permits because no waterside work will be conducted below the mean high water or high tide line.

Endangered Species Act. The Endangered Species Act (ESA) prohibits unauthorized take of species listed or proposed for listing as threatened or endangered. The ESA also ensures that the actions of federal agencies do not jeopardize the continued existence of threatened and endangered species. The mitigation measures incorporated into the Project will ensure compliance with the ESA.

Migratory Bird Treaty Act. Protection of migratory birds, their occupied nests, and their eggs is required by the Migratory Bird Treaty Act (MBTA) (16 United States Code 703 et seq.), 50 CFR 10, and California Fish and Game Code Sections 3503 and 3513. The full list of the species protected under the MBTA appears in 50 CFR 10.13 and includes federally and state-listed migratory birds as well as other non-listed migratory birds. Mitigation measures incorporated as part of the Project will ensure compliance with the MBTA.

Rivers and Harbors Act (Sections 10 and 14 [codified in Section 408]). The Rivers and Harbors Act prohibits the unauthorized obstruction of any navigable Water of the United States. All features below mean high water are subject to Section 10 of the Rivers and Harbors Act, which requires authorization for the construction of any structure in or over navigable waters. Nearby Lindsey Slough is considered navigable waters by USACE. Section 14 of the Rivers and Harbors Act (codified in and commonly referred to as Section 408) regulates permanent or temporary modifications to USACE public works projects, including levees. This Project does not require a Section 10 permit because no work will be conducted in Lindsey Slough or on the waterside of the levee.

6.2 State

Assembly Bills 32 and 1279. AB 32 required CARB to develop regulations to address global climate change due to GHG emissions. The bill also required attainment of a statewide GHG emissions limit, equal to the 1990 level, by December 31, 2020. As of 2019, statewide GHG emissions (418.4 $MMTCO_2e$) (CARB 2021) were below the 2020 GHG emissions limit (431 $MMTCO_2e$) (CARB 2018). Signed into law in 2022, AB 1279 expanded upon AB 32 by specifying an emissions limit which further requires California to reduce statewide GHG emissions to 85% below 1990s level by 2045. Emissions associated with Project construction will

be temporary and will not inhibit attainment of the statewide GHG emissions limits established by these bills.

Assembly Bill 52. AB 52 provides a method for incorporation of Native American tribal knowledge into the CEQA review process via formal consultation. In compliance with AB 52, tribal members or organizations, provided by the NAHC, were contacted for information on the potential for indigenous resources in or near the Project Area. Results of tribal outreach efforts undertaken in support of the Project gave no indication that tribal cultural resources are present within the Project Area.

Assembly Bill 341. AB 341 established regulations requiring commercial business and multi-family residences to implement recycling programs. AB 341 also updated the statewide goal from AB 939 (see Integrated Waste Management Act below) from a 50% reduction in solid waste disposal to a 75% reduction by 2020. Because Project materials will be reused or recycled where feasible and solid waste will be generated for a short period during Project construction, the Project will not impair the attainment of solid waste reduction goals.

California Environmental Quality Act. This IS/MND has been prepared to comply with CEQA.

California Endangered Species Act. Generally, CDFW administers the state laws providing protection of fish and wildlife resources, including the California ESA. The California ESA parallels the federal ESA and was written to protect state endangered and threatened species. Mitigation measures incorporated as part of the Project will ensure compliance with California ESA.

Delta Protection Act. The Delta Protection Act was established in recognition of the increasing threats to the resources of the Primary Zone of the Delta from urban and suburban encroachment, which has the potential to impact agriculture, wildlife habitat, and recreational uses. Pursuant to the Delta Protection Act, the Land Use and Resource Management Plan for the Primary Zone of the Delta was completed and adopted by the Delta Protection Commission in 1995 (updated in 2002). The Project will not result in urban or suburban encroachment and is, therefore, in compliance with this act.

Delta Reform Act. The Delta Reform Act created the Delta Stewardship Council to oversee the management of water and environmental resources in the Delta through the development and implementation of the Delta Plan. The Project is not a covered action and therefore does not need a consistency determination from the Delta Stewardship Council.

Fish and Game Code Section 1600 et seq. California Fish and Game Code Section 1600 et seq. gives authority to CDFW to regulate activities that interfere with the natural flow of, or substantially alter, the channel, bed, or bank of a lake, river, or stream. The Project does not include the waterside levee below the hinge point or waterside crest; therefore, the Project will not alter or interfere with the flow of a lake, river, or stream.

Fish and Game Code Sections 86, 3503, and 3513. California Fish and Game Code Section 86 defines take as hunting, pursuing, catching, capturing, or killing, or attempting to hunt, pursue, catch, capture, or kill. Under Fish and Game Code Section 3503 it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided. Fish and Game Code Section 3503.5 protects all birds-of-prey (raptors) and their eggs and nests, and under

Section 3513, it is unlawful to take or possess any migratory non-game bird designated under the MBTA. Mitigation measures incorporated into the Project will ensure compliance with these Fish and Game Code sections.

Fish and Game Code Sections 3511, 4700, 5050, and 5515. California Fish and Game Code Sections 3511, 4700, 5050, and 5515 designated rare fish and wildlife species as Fully Protected in California. This designation provides additional protection to these species from unauthorized take or possession. Mitigation measures incorporated into the Project will ensure compliance with these sections.

Integrated Waste Management Act (AB 939). The Integrated Waste Management Act made California cities and counties responsible for enacting plans to divert 25% of solid waste by 1995 and 50% by 2000. Because Project materials will be reused or recycled where feasible and solid waste will be generated only for a short period during Project construction, the Project will not impair the attainment of solid waste reduction goals.

Native Plant Protection Act. The Native Plant Protection Act (NPPA) directed CDFW to preserve, protect, and enhance native plants. It gave CDFW the authority to designate native plants as endangered or rare and require that landowners who have been notified of state-listed species on their property, and who wish to destroy those plants and their habitat, provide CDFW with notice to salvage the plants no less than 10 days before destruction occurs. Many of the species designated under the NPPA were subsumed by California ESA, but there is a subset of species, subspecies, and varieties of plants that were not and are protected as rare under the NPPA. Mitigation measures incorporated as part of the Project, which include NPPA rare plants that may be impacted, will ensure compliance with NPPA.

Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Control Act was established to protect water quality and beneficial uses of water in California. This act requires that National Pollutant Discharge Elimination System and Waste Discharge Requirement permits for point and nonpoint source discharges, respectively, be obtained from the RWQCB to protect water quality in surface waters, groundwater, and wetlands. The Project will not impact Waters of the United States; therefore, National Pollutant Discharge Elimination System and Waste Discharge Requirement permits will not be obtained.

Surface Mining and Reclamation Act. The Surface Mining and Reclamation Act includes policies for the regulation of surface mining operations to balance production of state mineral resources with minimization of adverse environmental impacts associated with these activities. In support of these goals, state lands are classified into mineral resource zones based on known or inferred mineral resources. No land on Egbert Tract has been classified into mineral resource zones, so the Project will not conflict with the policies in this act.

Warren-Alquist Act. The Warren-Alquist Act established the California Energy Commission, the state's primary energy policy and planning agency. The California Energy Commission works to advance state energy policy, encourage energy efficiency, and develop renewable energy. Fossil fuels will be used only on a short-term basis during construction activities, and the Project will include BMPs for energy conservation (e.g., limiting idling time, properly maintaining equipment).

Williamson Act (also known as the California Land Conservation Act). The Williamson Act allows for the formation of contracts between local governments and private landowners to restrict use of specific parcels to agricultural or related open space land uses. The Project Area is

covered by a Williamson Act contract, and land use within the Project Area will not change over the long term following Project construction.

7 REFERENCES

Aagaard, B. T., J. L. Blair, J. Boatwright, S. H. Garcia, R. A. Harris, A. J. Michael, D. P. Schwartz, and J. S. DiLeo. 2016. Earthquake outlook for the San Francisco Bay region 2014–2043 (ver. 1.1, August 2016): U.S. Geological Survey Fact Sheet 2016–3020. Available at: http://dx.doi.org/10.3133/fs20163020.

Atwater, B. F. 1982a. Geologic maps of the Sacramento-San Joaquin Delta, California. Miscellaneous field studies map MF-1401. Rio Vista quadrangle. Scale 1:24,000. Available at: https://ngmdb.usgs.gov/Prodesc/proddesc_7126.htm.

Atwater, B. F. 1982b. Geologic Maps of the Sacramento-San Joaquin Delta, California. Report to accompany Map MF-1401. Available at: https://pubs.usgs.gov/mf/1401/report.pdf.

Bryant, W. A., and S. E. Cluett, compilers. 2002a. Fault number 53b, Greenville fault zone, Marsh Creek-Greenville section. Quaternary fault and fold database of the United States. Available at: https://earthquake.usgs.gov/static/lfs/nshm/qfaults/Reports/53b.pdf.

Bryant, W. A., and S. E. Cluett, compilers. 2002b. Fault number 37, Green Valley fault, in Quaternary fault and fold database of the United States: Available at: https://earthquake.usgs.gov/cfusion/qfault/show_report_AB_archive.cfm?fault_id=37&section_id=.

CalEEMod (California Emissions Estimator Model). 2024. CalEEMOD, Version 2022.1.1.29. Available at: https://www.caleemod.com/model.

CalEPA (California Environmental Protection Agency). 2025. Climate dashboard. Website. https://calepa.ca.gov/climate-dashboard/ [Accessed March 2025].

CalFire (California Department of Forestry and Fire Protection). 2023. California Fire Hazard Severity Zones (FHSZ). Available at: https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones.

California DOC (Department of Conservation). 2024. EQ Zapp: California earthquake hazards zone application. Available at: https://www.conservation.ca.gov/cgs/geohazards/eq-zapp.

California DOC. 2025a. Important farmland categories. Available at: https://www.conservation.ca.gov/dlrp/fmmp/Pages/Important-Farmland-Categories.aspx.

California DOC. 2025b. California important farmland finder. California Department of Conservation, Division of Land Resources Protection, Farmland Mapping and Monitoring Program. Available at: https://maps.conservation.ca.gov/DLRP/CIFF/.

California DOC. 2025c. California tsunami maps. Available at: https://www.conservation.ca.gov/cgs/tsunami/maps.

CARB (California Air Resources Board). 2018. AB 32 Scoping Plan. Available at: https://ww3.arb.ca.gov/cc/scopingplan/scopingplan.htm.

CARB. 2021. California greenhouse gas emissions for 2000 to 2019. Trends of Emissions and Other Indicators. Sacramento, California.

CARB. 2024a. Table of Ambient Air Quality Standards. Available at: https://ww2.arb.ca.gov/sites/default/files/2024-08/AAQS%20Table_ADA_FINAL_07222024.pdf.

CARB. 2024b. Current California GHG Emission Inventory Data. Available at: https://ww2.arb.ca.gov/ghg-inventory-data

CARB. 2024c. California greenhouse gas emissions for 2000 to 2022. Trends of Emissions and Other Indicators. Sacramento, California. Available at https://ww2.arb.ca.gov/sites/default/files/2024-09/nc-2000_2022_ghg_inventory_trends.pdf.

CARB. 2025a. State area designations describing summary statistics for pollutants. Website. https://www.arb.ca.gov/adam/trends/trends1.php [Accessed March 2025].

CARB. 2025b. California Ambient Air Quality Standards. Website. https://ww2.arb.ca.gov/resources/background-air-quality-standards.

CBI (Conservation Biology Institute) and USFS (U.S. Department of Agriculture Forest Service). 2025. Bat Acoustic Monitoring Visualization Tool. https://visualize.batamp.databasin.org/ [Accessed March 2025].

CDC (Centers for Disease Control and Prevention). 2015. Noise levels by decibels. Available at: https://stacks.cdc.gov/view/cdc/78630

CDFW (California Department of Fish and Wildlife). 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency, Department of Fish and Game. March 7, 2012.

CDFW. 2018. Protocols for surveying and evaluating impacts to special status native plant populations and sensitive natural communities. California Natural Resources Agency, Sacramento, California. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline.

CDFW. 2025a. CNDDB, Rarefind version 5. CDFW, Sacramento, California. Available at: https://www.wildlife.ca.gov/data/cnddb/maps-and-data.

CDFW. 2025b. Unprocessed Data from CNDDB Online Field Survey Form [ds1002]. California Department of Fish and Wildlife. Biogeographic Information and Observation System (BIOS). Available at: http://bios.dfg.ca.gov.

CDFW. 2025c. List of California Sensitive Natural Communities. Vegetation Classification and Mapping Program, California Department of Fish and Game, Sacramento, California. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153609&inline.

CDTSC (California Department of Toxic Substances Control). 2025. EnviroStor online map viewer database. Website. http://www.envirostor.dtsc.ca.gov/ [Accessed May 2025].

CEC (California Energy Commission). 2025. California Energy Commission: about. Website. https://www.energy.ca.gov/about [Accessed May 2025].

Central Valley RWQCB (Regional Water Quality Control Board). 2019. The Water Quality Control Plan (Basin Plan) for the Central Valley Region. Fifth edition.

CGS (California Geological Survey). 2010. Fault activity map of California. Compilation and interpretation by C. W. Jennings and W. A. Bryant with assistance from G. Saucedo. https://maps.conservation.ca.gov/cgs/fam/App/ [Accessed April 2025].

CGS. 2018. Special Publication 42. Earthquake fault zones: A guide for government agencies, property owners/developers, and geoscience practitioners for assessing fault rupture hazards in California. Available at: https://www.conservation.ca.gov/cgs/Documents/Publications/Special-Publications/SP_042.pdf.

CGS. 2020. Publications of the SMARA Mineral Land Classification Project dealing with mineral resources in California. Mineral Resources Program, Sacramento, California.

CGS. 2022. MapService of the Alquist-Priolo Fault Zones defined under the Alquist-Priolo Earthquake Fault Zoning Act. Available at: https://gis.conservation.ca.gov/portal/home/item.html?id=c280aad6034449e085023ef4f8d7e2ad.

CNPS (California Native Plant Society). 2025a. Inventory of rare and endangered plants of California (online edition, v9.5.1). Rare Plant Program, California Native Plant Society, Sacramento, California. [Accessed April 2025].

CNPS. 2025b. A Manual of California Vegetation, Online Edition. Available at: http://www.cnps.org/cnps/vegetation/ [Accessed April 2025]. Prepared by California Native Plant Society, Sacramento, California.

Coffman Associates. 2024a. Land Use Compatibility Plan for Travis Air Force Base. Adopted August 8, 2024. Prepared for County of Solano Department of Resource Management. Prepared by Coffman Associates, Inc., Phoenix, Arizona.

Coffman Associates. 2024b. Airport Land Use Compatibility Plan for Rio Vista Airport. Adopted August 8, 2024. Prepared for County of Solano Department of Resource Management. Prepared by Coffman Associates, Inc., Phoenix, Arizona.

Cook, S. F. 1976. The Population of the California Indians, 1769–1970. University of California Press, Berkeley, California.

Delta Stewardship Council. 2024. Delta Plan. Available at: https://deltacouncil.ca.gov/delta-plan/.

Depczynski, J., R. C. Franklin, K. Challinor, W. Williams, and L. J. Fragar. 2005. Farm noise emissions during common agricultural activities. Journal of Agricultural Safety and Health 11: 325–334.

DPC (Delta Protection Commission). 2010. Land Use and Resource Management Plan. Available at: https://delta.ca.gov/wp-content/uploads/2019/12/Land-Use-and-Resource-Management-Plan-2.25.10_-m508.pdf.

Drexler, J. Z, C. S. de Fontaine, and T. A. Brown. 2009. Peat accretion histories during the past 6000 years in marshes of the Sacramento-San Joaquin Delta, California, USA. Estuaries and Coasts 32: 871–892.

eBird. 2025. eBird: An online database of bird distribution and abundance. Website. http://www.ebird.org [Accessed: December 2024]. Prepared by eBird, Cornell Lab of Ornithology, Ithaca, New York

FEMA (Federal Emergency Management Agency). 2025. FEMA Flood Map Service Center. Available at: https://msc.fema.gov/portal/home.

FHWA. 2017. Construction noise handbook. Construction equipment noise levels and ranges. Available at: https://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/handbook09.cfm.

FTA (Federal Transit Administration). 2018. Transit noise and vibration impact assessment manual. FTA Report No. 0123. Prepared by John A. Volpe National Transportation Systems Center. Available at: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf.

ICF. 2022. California Emissions Estimator Model (CalEEMod) User Guide, Version 2022.1.1.29. Available at: https://www.caleemod.com/documents/user-guide/01_User%20Guide.pdf

Johnson, P. J. 1978. Patwin. Pages 385–415 *in* California: Handbook of North American Indians, Volume 8. Smithsonian Institute. Plenum Press, New York.

Kroeber, A. L. 1925. Handbook of the Indians of California. Smithsonian Institution Bureau of American Ethnology Bulletin 78. Government Printing Office, Washington.

Kroeber, A. L. 1932. The Patwin and their neighbors. University of California Publications in Archaeology and Ethnology 29: 253–423.

MBK Engineers. 2025. Project Summary – Egbert Tract Lindsey Slough Levee Rehabilitation.

Natural Investigations Company. 2025. Cultural Resource Assessment for the Lindsey Slough Levee Rehabilitation Project Solano County, California. Prepared by Natural Investigations Company, Sacramento, California.

Powers, S. 1877. Tribes of California.

Reclamation District (RD) 536. 2025. Notice of Exemption. Deferred Maintenance Project – Four Pipe Replacements. Filed by RD 536, Stockton, California.

PRISM Climate Group. 2025. Time series values for individual locations. Website. http://prism.oregonstate.edu/explorer/ [Accessed April 2025]. Prepared by PRISM Climate Group, Oregon State University, Corvallis, Oregon.

SJCOG (San Joaquin Council of Governments). 2018. Draft Programmatic Environmental Impact Report: Aesthetics. Available at: https://www.sjcog.org/DocumentCenter/View/3869/2018-RTP-SCS-PDEIR-41-Aesthetics-and-Visual-Resources?bidId=.

San Joaquin County. 1992. San Joaquin County General Plan 2010. Section III.A Seismic and Geological Hazards. Available at: https://www.sjgov.org/commdev/cgi-bin/cdyn.exe/handouts-planning_GP-V3-III-A?grp=handouts-planning&obj=GP-V3-III-A [Accessed April 2025].

Shannon & Wilson. 2024. Geotechnical Investigation Report, Lindsey Slough Levee Rehabilitation Project, Solano County, California.

Solano Collaborative (City of Vacaville Groundwater Sustainability Agency [GSA], Northern Delta GSA, Sacramento County GSA, Solano GSA, Solano Irrigation District GSA). 2021. Solano Subbasin Groundwater Sustainability Plan.

Solano County. 2008. Solano County General Plan. Available at: https://www.solanocounty.com/depts/rm/planning/general_plan.asp.

Solano County. 2011. Solano County Climate Action Plan. Prepared by AECOM. Available at: https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=10080

Solano County. 2025. Countywide Integrated Waste Management Plan. Available at: https://www.solanocounty.com/depts/rm/planning/solano_county_recycling/ciwmp_planning_documents.asp.

Solano County Water Agency. 2012. Solano Multispecies Habitat Conservation Plan. Available at: https://www.scwa2.com/solano-multispecies-habitat-conservation-plan/.

Swainson's Hawk Technical Advisory Committee. 2000. Swainson's Hawk Technical Advisory Committee's recommended timing and methodology for Swainson's hawk nesting surveys in California's Central Valley. Available at https://www.wildlife.ca.gov/Conservation/Survey-Protocols#377281284-birds.

SWRCB (State Water Resources Control Board). 2024. CA 2024 Integrated Report. Available at: https://gispublic.waterboards.ca.gov/portal/apps/webappviewer/index.html?id=f0e4ac76fd0e4a53bebead89339ef3c9.

Unruh, J. R., and C. S. Hitchcock. 2009. Characterization of potential seismic sources in the Sacramento-San Joaquin Delta, California. Prepared by Fugro William Lettis & Associates, Inc. Walnut Creek, California for U.S. Geological Survey, National Earthquake Hazards Reduction Program. Available at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/dd_jardins/DDJ-142_Unruh.pdf.

USACE (U.S. Army Corps of Engineers). 1987. Corps of Engineers wetlands delineation manual. Technical Report Y-87-1. USACE, Environmental Laboratory, Waterways Experiment Station, Vicksburg, Mississippi.

USACE. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. Version 2.0. Final Report ERDC/EL TR-08-28. Wetlands Regulatory Assistance Program, USACE, Engineer Research and Development Center, Environmental Laboratory, Vicksburg, Mississippi.

USACE. 2024. Rapid Ordinary High Water Mark (OHWM) identification data sheet. ENG FORM 6250. Prepared by USACE, Hanover, New Hampshire.

USACE. 2025a. National ordinary high water mark field delineation manual for rivers and streams. Final Version. ERDC/CRREL TR-25-1. Prepared by USACE, Hanover, New Hampshire.

USACE. 2025b. Navigable waterways in the Sacramento District. Available at: https://www.spk.usace.army.mil/Missions/Regulatory/Jurisdiction/Navigable-Waters-of-the-US/.

USDA NRCS (U.S. Department of Agriculture, Natural Resources Conservation Service). 2025a. Web soil survey. Online database. http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm [Accessed March 2025]. Natural Resource Conservation Service.

USDA NRCS. 2025b. Hydric soils lists for Solano County, California soil survey area. Website. https://www.nrcs.usda.gov/publications/query-by-ssa.html [Accessed March 2025]. Natural Resource Conservation Service.

USEIA (U.S. Energy Information Administration). 2025. Rankings: Total Energy Consumed per Capita, 2021 (million Btu). Available at: https://www.eia.gov/state/rankings/?sid=US.

USEPA (U. S. Environmental Protection Agency). 2019. AERMOD Model Formulation and Evaluation. EPA-454/R-19-014. Office of Air Quality Planning and Standards. Air Quality Assessment Division. Research Triangle Park, North Carolina.

USEPA. 2025. Nonattainment Areas for Criteria Pollutants (Green Book). Available at: https://www.epa.gov/green-book.

USFWS (U.S. Fish and Wildlife Service). 1997. Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Projects with Relatively Small Effects on the Giant Garter Snake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter and Yolo Counties, California.

USFWS. 2000. Guidelines for conducting and reporting botanical inventories for federally listed, proposed and candidate plants.

USFWS. 2025a. Information for Planning and Consultation (IPaC): online project planning tool. https://ecos.fws.gov/ipac/ [Accessed April 2025].

USFWS. 2025b. National Wetlands Inventory (NWI) wetlands and riparian polygon data. Geospatial wetlands data. http://www.fws.gov/wetlands/ [Accessed April 2025]. Prepared by USFWS, Arlington, Virginia.

USGS (U.S. Geological Survey). 2002. Map - Geologic map and map database of northeastern San Francisco Bay Region, California. Available at: https://geo-nsdi.er.usgs.gov/metadata/map-mf/2403/metadata.html.

USGS. 2025. Hydrologic units from the watershed boundary dataset. Available at: https://gispublic.waterboards.ca.gov/portal/home/item.html?id=b6c1bab9acc148e7ac726e33c43402ee.

Whipple, A. A., R. M. Grossinger, D. Rankin, B. Stanford, and R. A. Askevold. 2012. Sacramento-San Joaquin Delta historical ecology investigation: exploring pattern and process. A report of SFEI-ASC's Historical Ecology Program, Publication #672. Prepared by San Francisco Estuary Institute-Aquatic Science Center, Richmond, California for California Department of Fish and Game and Ecosystem Restoration Program. Available at: http://www.sfei.org/DeltaHEStudy.

YSAQMD (Yolo-Solano Air Quality Management District). 2007. Handbook for assessing and mitigating air quality impacts. Available at: https://www.ysaqmd.org/wp-content/uploads/Planning/CEQAHandbook2007.pdf.

YSAQMD. 2019. Air Quality Attainment Plan. Triennial Assessment and Plan Update. Available at: https://www.ysaqmd.org/wp-content/uploads/2024/03/2019-Triennial-Plan.pdf.

YSAQMD. 2022. Attainment status. Available at: https://www.ysaqmd.org/plans-data/attainment/.

YSAQMD. 2024. Annual Report. Available at: https://www.ysaqmd.org/wp-content/uploads/2025/01/2024-Annual-Report-for-email-2.pdf.

Appendices

Appendix A

California Emissions Estimator Model Data Entry and Emissions Summary Sheets

Table A-1. $PM_{2.5}$ emissions standardization calculations for Yolo-Solano Air Quality Management District threshold comparison.

Step	Calculation	Value
Convert lb/day to µg/day[1]	1.38 lb/day × 453,592,370 µg/lb	625,957,471 µg/day $PM_{2.5}$
Convert units for area of dispersion (Project Area)[2]	0.95 mi^2 × 2,590,000 m^2/mi^2	2,460,500 m^2
Calculate mixing volume[3]	100 m × 2,460,500 m^2	246,050,000 m^3
Calculate $PM_{2.5}$ concentration	625,957,471 µg/day ÷ 246,050,000 m^3	2.54 $\mu g/m^3$ per day

Source:

Notes: µg = microgram
lb = pound
m^2 = square meter
m^3 = cubic meter
$PM_{2.5}$ = respirable particulate matter less than 2.5 microns in diameter
YSAQMD =Yolo-Solano Air Quality Management District

[1] Project emissions estimated by California Emissions Estimator Model Version 2022.1.1.29 are 0.56 lb/day.

[2] Project Area is 0.95 mi^2.

[3] 100 m is suggested as a conservative mixing height (USEPA 2019).

Lindsey Slough Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year, Unmitigated

2.3. Construction Emissions by Year, Mitigated

3. Construction Emissions Details

3.1. Phase 1 Construction (2025) - Unmitigated

3.2. Phase 1 Construction (2025) - Mitigated

3.3. Phase 2 Construction (2025) - Unmitigated

3.4. Phase 2 Construction (2025) - Mitigated

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.2.2. Mitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.3.2. Mitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lindsey Slough
Construction Start Date	5/1/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	5.70
Precipitation (days)	2.20
Location	38.24561342437448, -121.70056407095126
County	Solano-Sacramento
City	Unincorporated
Air District	Yolo/Solano AQMD
Air Basin	Sacramento Valley
TAZ	878
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

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
User Defined Linear	0.95	Mile	0.00	0.00	—	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

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.	5.27	4.37	45.0	31.9	0.14	1.82	38.0	39.8	1.69	6.15	7.83	—	16,558	16,558	0.47	1.03	13.3	16,889
Mit.	5.27	4.37	45.0	31.9	0.14	1.82	34.3	36.1	1.69	4.53	6.22	—	16,558	16,558	0.47	1.03	13.3	16,889
% Reduced	—	—	—	—	—	—	10%	9%	—	26%	21%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.10	3.40	36.0	25.2	0.11	1.39	33.2	34.6	1.29	5.29	6.58	—	13,667	13,667	0.38	0.88	0.30	13,938
Mit.	4.10	3.40	36.0	25.2	0.11	1.39	30.1	31.5	1.29	3.94	5.23	—	13,667	13,667	0.38	0.88	0.30	13,938
% Reduced	—	—	—	—	—	—	9%	9%	—	26%	21%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.89	0.73	7.70	5.39	0.02	0.30	6.83	7.14	0.28	1.10	1.38	—	2,885	2,885	0.08	0.18	1.03	2,943

Mit.	0.89	0.73	7.70	5.39	0.02	0.30	6.18	6.48	0.28	0.81	1.09	—	2,885	2,885	0.08	0.18	1.03	2,943
% Reduced	—	—	—	—	—	—	10%	9%	—	26%	21%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.16	0.13	1.41	0.98	< 0.005	0.06	1.25	1.30	0.05	0.20	0.25	—	478	478	0.01	0.03	0.17	487
Mit.	0.16	0.13	1.41	0.98	< 0.005	0.06	1.13	1.18	0.05	0.15	0.20	—	478	478	0.01	0.03	0.17	487
% Reduced	—	—	—	—	—	—	10%	9%	—	26%	21%	—	—	—	—	—	—	—

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	5.27	4.37	45.0	31.9	0.14	1.82	38.0	39.8	1.69	6.15	7.83	—	16,558	16,558	0.47	1.03	13.3	16,889
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	4.10	3.40	36.0	25.2	0.11	1.39	33.2	34.6	1.29	5.29	6.58	—	13,667	13,667	0.38	0.88	0.30	13,938
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.89	0.73	7.70	5.39	0.02	0.30	6.83	7.14	0.28	1.10	1.38	—	2,885	2,885	0.08	0.18	1.03	2,943
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.16	0.13	1.41	0.98	< 0.005	0.06	1.25	1.30	0.05	0.20	0.25	—	478	478	0.01	0.03	0.17	487

2.3. Construction Emissions by Year, Mitigated

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	5.27	4.37	45.0	31.9	0.14	1.82	34.3	36.1	1.69	4.53	6.22	—	16,558	16,558	0.47	1.03	13.3	16,889
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	4.10	3.40	36.0	25.2	0.11	1.39	30.1	31.5	1.29	3.94	5.23	—	13,667	13,667	0.38	0.88	0.30	13,938
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.89	0.73	7.70	5.39	0.02	0.30	6.18	6.48	0.28	0.81	1.09	—	2,885	2,885	0.08	0.18	1.03	2,943
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.16	0.13	1.41	0.98	< 0.005	0.06	1.13	1.18	0.05	0.15	0.20	—	478	478	0.01	0.03	0.17	487

3. Construction Emissions Details

3.1. Phase 1 Construction (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	5.08	4.27	38.7	29.9	0.10	1.71	—	1.71	1.57	—	1.57	—	10,413	10,413	0.42	0.08	—	10,449
Dust From Material Movement	—	—	—	—	—	—	5.96	5.96	—	2.64	2.64	—	—	—	—	—	—	—
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	0.33	0.28	2.55	1.97	0.01	0.11	—	0.11	0.10	—	0.10	—	685	685	0.03	0.01	—	687
Dust From Material Movement	—	—	—	—	—	—	0.39	0.39	—	0.17	0.17	—	—	—	—	—	—	—
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	0.46	0.36	< 0.005	0.02	—	0.02	0.02	—	0.02	—	113	113	< 0.005	< 0.005	—	114
Dust From Material Movement	—	—	—	—	—	—	0.07	0.07	—	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.05	0.93	0.00	0.00	4.63	4.63	0.00	0.49	0.49	—	228	228	< 0.005	0.01	0.88	230
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	0.16	0.07	6.23	0.99	0.04	0.12	27.4	27.5	0.12	3.01	3.13	—	5,917	5,917	0.05	0.94	12.5	6,210
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.30	0.30	0.00	0.03	0.03	—	13.8	13.8	< 0.005	< 0.005	0.02	13.9
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	0.01	< 0.005	0.43	0.07	< 0.005	0.01	1.79	1.80	0.01	0.20	0.20	—	389	389	< 0.005	0.06	0.35	408
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	2.28	2.28	< 0.005	< 0.005	< 0.005	2.31
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	0.08	0.01	< 0.005	< 0.005	0.33	0.33	< 0.005	0.04	0.04	—	64.4	64.4	< 0.005	0.01	0.06	67.5

3.2. Phase 1 Construction (2025) - Mitigated

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	5.08	4.27	38.7	29.9	0.10	1.71	—	1.71	1.57	—	1.57	—	10,413	10,413	0.42	0.08	—	10,449
Dust From Material Movement	—	—	—	—	—	—	2.33	2.33	—	1.03	1.03	—	—	—	—	—	—	—
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.33	0.28	2.55	1.97	0.01	0.11	—	0.11	0.10	—	0.10	—	685	685	0.03	0.01	—	687
Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.07	0.07	—	—	—	—	—	—	—
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	0.46	0.36	< 0.005	0.02	—	0.02	0.02	—	0.02	—	113	113	< 0.005	< 0.005	—	114
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.05	0.93	0.00	0.00	4.63	4.63	0.00	0.49	0.49	—	228	228	< 0.005	0.01	0.88	230
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	0.16	0.07	6.23	0.99	0.04	0.12	27.4	27.5	0.12	3.01	3.13	—	5,917	5,917	0.05	0.94	12.5	6,210
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.30	0.30	0.00	0.03	0.03	—	13.8	13.8	< 0.005	< 0.005	0.02	13.9
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	0.01	< 0.005	0.43	0.07	< 0.005	0.01	1.79	1.80	0.01	0.20	0.20	—	389	389	< 0.005	0.06	0.35	408
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	2.28	2.28	< 0.005	< 0.005	< 0.005	2.31
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	0.08	0.01	< 0.005	< 0.005	0.33	0.33	< 0.005	0.04	0.04	—	64.4	64.4	< 0.005	0.01	0.06	67.5

3.3. Phase 2 Construction (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	3.94	3.31	30.2	23.6	0.08	1.29	—	1.29	1.19	—	1.19	—	8,388	8,388	0.34	0.07	—	8,417
Dust From Material Movement	—	—	—	—	—	—	5.16	5.16	—	2.22	2.22	—	—	—	—	—	—	—
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	3.94	3.31	30.2	23.6	0.08	1.29	—	1.29	1.19	—	1.19	—	8,388	8,388	0.34	0.07	—	8,417
Dust From Material Movement	—	—	—	—	—	—	5.16	5.16	—	2.22	2.22	—	—	—	—	—	—	—
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	0.52	0.44	3.97	3.11	0.01	0.17	—	0.17	0.16	—	0.16	—	1,103	1,103	0.04	0.01	—	1,107
Dust From Material Movement	—	—	—	—	—	—	0.68	0.68	—	0.29	0.29	—	—	—	—	—	—	—
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	0.09	0.08	0.72	0.57	< 0.005	0.03	—	0.03	0.03	—	0.03	—	183	183	0.01	< 0.005	—	183
Dust From Material Movement	—	—	—	—	—	—	0.12	0.12	—	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	0.03	0.03	0.05	0.93	0.00	0.00	4.63	4.63	0.00	0.49	0.49	—	228	228	< 0.005	0.01	0.88	230
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	0.13	0.06	5.34	0.85	0.03	0.10	23.5	23.6	0.10	2.58	2.68	—	5,072	5,072	0.04	0.80	10.7	5,323
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.07	0.66	0.00	0.00	4.63	4.63	0.00	0.49	0.49	—	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	0.13	0.06	5.74	0.86	0.03	0.10	23.5	23.6	0.10	2.58	2.68	—	5,074	5,074	0.04	0.80	0.28	5,314
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.09	0.00	0.00	0.60	0.60	0.00	0.06	0.06	—	27.5	27.5	< 0.005	< 0.005	0.05	27.9
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	0.02	0.01	0.74	0.11	< 0.005	0.01	3.07	3.08	0.01	0.34	0.35	—	667	667	0.01	0.11	0.61	699
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.11	0.11	0.00	0.01	0.01	—	4.56	4.56	< 0.005	< 0.005	0.01	4.61
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	0.13	0.02	< 0.005	< 0.005	0.56	0.56	< 0.005	0.06	0.06	—	110	110	< 0.005	0.02	0.10	116

3.4. Phase 2 Construction (2025) - Mitigated

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	3.94	3.31	30.2	23.6	0.08	1.29	—	1.29	1.19	—	1.19	—	8,388	8,388	0.34	0.07	—	8,417
Dust From Material Movement	—	—	—	—	—	—	2.01	2.01	—	0.87	0.87	—	—	—	—	—	—	—
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 Equipm	3.94	3.31	30.2	23.6	0.08	1.29	—	1.29	1.19	—	1.19	—	8,388	8,388	0.34	0.07	—	8,417
Dust From Material Movement	—	—	—	—	—	—	2.01	2.01	—	0.87	0.87	—	—	—	—	—	—	—
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	0.52	0.44	3.97	3.11	0.01	0.17	—	0.17	0.16	—	0.16	—	1,103	1,103	0.04	0.01	—	1,107
Dust From Material Movement	—	—	—	—	—	—	0.26	0.26	—	0.11	0.11	—	—	—	—	—	—	—
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	0.09	0.08	0.72	0.57	< 0.005	0.03	—	0.03	0.03	—	0.03	—	183	183	0.01	< 0.005	—	183
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	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	0.03	0.03	0.05	0.93	0.00	0.00	4.63	4.63	0.00	0.49	0.49	—	228	228	< 0.005	0.01	0.88	230

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	0.13	0.06	5.34	0.85	0.03	0.10	23.5	23.6	0.10	2.58	2.68	—	5,072	5,072	0.04	0.80	10.7	5,323
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.07	0.66	0.00	0.00	4.63	4.63	0.00	0.49	0.49	—	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	0.13	0.06	5.74	0.86	0.03	0.10	23.5	23.6	0.10	2.58	2.68	—	5,074	5,074	0.04	0.80	0.28	5,314
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.09	0.00	0.00	0.60	0.60	0.00	0.06	0.06	—	27.5	27.5	< 0.005	< 0.005	0.05	27.9
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	0.02	0.01	0.74	0.11	< 0.005	0.01	3.07	3.08	0.01	0.34	0.35	—	667	667	0.01	0.11	0.61	699
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.11	0.11	0.00	0.01	0.01	—	4.56	4.56	< 0.005	< 0.005	0.01	4.61
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	0.13	0.02	< 0.005	< 0.005	0.56	0.56	< 0.005	0.06	0.06	—	110	110	< 0.005	0.02	0.10	116

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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
Phase 1 Construction	Linear, Grading & Excavation	8/4/2025	8/30/2025	6.00	24.0	Repairs to the levee between Station 280+50 and Station 289+00
Phase 2 Construction	Linear, Grading & Excavation	9/2/2025	10/27/2025	6.00	48.0	Repairs to the levee between Station 273+50 and 280+50 as well as Station 289+00 to 294+00. Phase I and Phase II will be performed over separate construction seasons

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
Phase 1 Construction	Excavators	Diesel	Average	1.00	5.00	273	0.38
Phase 1 Construction	Rubber Tired Dozers	Diesel	Average	1.00	6.00	215	0.40
Phase 1 Construction	Rollers	Diesel	Average	1.00	6.00	74.6	0.43
Phase 1 Construction	Scrapers	Diesel	Average	1.00	6.00	407	0.48
Phase 1 Construction	Other Construction Equipment	Diesel	Average	1.00	6.00	300	0.42
Phase 1 Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	5.00	86.0	0.37
Phase 1 Construction	Graders	Diesel	Average	1.00	2.00	250	0.41

Phase 1 Construction	Other Construction Equipment	Diesel	Average	2.00	15.0	430	0.42
Phase 2 Construction	Rubber Tired Dozers	Diesel	Average	1.00	5.00	215	0.40
Phase 2 Construction	Excavators	Diesel	Average	1.00	5.00	273	0.38
Phase 2 Construction	Rollers	Diesel	Average	1.00	4.00	74.6	0.38
Phase 2 Construction	Graders	Diesel	Average	1.00	1.00	250	0.41
Phase 2 Construction	Scrapers	Diesel	Average	1.00	7.00	407	0.48
Phase 2 Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	2.00	86.0	0.37
Phase 2 Construction	Other Construction Equipment	Diesel	Average	2.00	11.0	430	0.42
Phase 2 Construction	Other Construction Equipment	Diesel	Average	1.00	5.00	300	0.42

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Phase 1 Construction	Excavators	Diesel	Average	1.00	5.00	273	0.38
Phase 1 Construction	Rubber Tired Dozers	Diesel	Average	1.00	6.00	215	0.40
Phase 1 Construction	Rollers	Diesel	Average	1.00	6.00	74.6	0.43
Phase 1 Construction	Scrapers	Diesel	Average	1.00	6.00	407	0.48
Phase 1 Construction	Other Construction Equipment	Diesel	Average	1.00	6.00	300	0.42
Phase 1 Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	5.00	86.0	0.37
Phase 1 Construction	Graders	Diesel	Average	1.00	2.00	250	0.41
Phase 1 Construction	Other Construction Equipment	Diesel	Average	2.00	15.0	430	0.42
Phase 2 Construction	Rubber Tired Dozers	Diesel	Average	1.00	5.00	215	0.40
Phase 2 Construction	Excavators	Diesel	Average	1.00	5.00	273	0.38
Phase 2 Construction	Rollers	Diesel	Average	1.00	4.00	74.6	0.38
Phase 2 Construction	Graders	Diesel	Average	1.00	1.00	250	0.41

Phase 2 Construction	Scrapers	Diesel	Average	1.00	7.00	407	0.48
Phase 2 Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	2.00	86.0	0.37
Phase 2 Construction	Other Construction Equipment	Diesel	Average	2.00	11.0	430	0.42
Phase 2 Construction	Other Construction Equipment	Diesel	Average	1.00	5.00	300	0.42

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Phase 1 Construction	—	—	—	—
Phase 1 Construction	Worker	6.00	50.0	LDA,LDT1,LDT2
Phase 1 Construction	Vendor	0.00	0.00	HHDT,MHDT
Phase 1 Construction	Hauling	35.0	50.0	HHDT
Phase 1 Construction	Onsite truck	0.00	0.00	HHDT
Phase 2 Construction	—	—	—	—
Phase 2 Construction	Worker	6.00	50.0	LDA,LDT1,LDT2
Phase 2 Construction	Vendor	0.00	0.00	HHDT,MHDT
Phase 2 Construction	Hauling	30.0	50.0	HHDT
Phase 2 Construction	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Phase 1 Construction	—	—	—	—
Phase 1 Construction	Worker	6.00	50.0	LDA,LDT1,LDT2
Phase 1 Construction	Vendor	0.00	0.00	HHDT,MHDT
Phase 1 Construction	Hauling	35.0	50.0	HHDT

Phase 1 Construction	Onsite truck	0.00	0.00	HHDT
Phase 2 Construction	—	—	—	—
Phase 2 Construction	Worker	6.00	50.0	LDA,LDT1,LDT2
Phase 2 Construction	Vendor	0.00	0.00	HHDT,MHDT
Phase 2 Construction	Hauling	30.0	50.0	HHDT
Phase 2 Construction	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)
Phase 1 Construction	16,000	3,000	0.00	0.00	—
Phase 2 Construction	18,000	4,000	0.00	0.00	—

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
User Defined Linear	0.00	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

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

5.18.1.2. Mitigated

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

5.18.1.2. Mitigated

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)

5.18.2.2. Mitigated

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	24.2	annual days of extreme heat
Extreme Precipitation	2.75	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	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A

Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	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	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	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 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	35.3
AQ-PM	16.6
AQ-DPM	7.67
Drinking Water	62.6
Lead Risk Housing	17.0
Pesticides	76.2
Toxic Releases	38.6
Traffic	7.65
Effect Indicators	—
CleanUp Sites	61.7
Groundwater	95.7
Haz Waste Facilities/Generators	92.3
Impaired Water Bodies	99.0
Solid Waste	97.9
Sensitive Population	—
Asthma	85.8
Cardio-vascular	84.6
Low Birth Weights	90.7
Socioeconomic Factor Indicators	—
Education	44.9
Housing	37.5
Linguistic	32.0
Poverty	48.9
Unemployment	—

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	55.12639548
Employed	6.582830746
Median HI	48.659053
Education	—
Bachelor's or higher	49.15950212
High school enrollment	100
Preschool enrollment	73.18105993
Transportation	—
Auto Access	57.21801617
Active commuting	64.73758501
Social	—
2-parent households	52.4573335
Voting	80.5338124
Neighborhood	—
Alcohol availability	67.04735019
Park access	20.17194919
Retail density	3.27216733
Supermarket access	35.35223919
Tree canopy	68.22789683
Housing	—
Homeownership	71.19209547
Housing habitability	84.66572565
Low-inc homeowner severe housing cost burden	60.91364045
Low-inc renter severe housing cost burden	71.98768125

Uncrowded housing	83.16437829
Health Outcomes	—
Insured adults	34.59514949
Arthritis	0.0
Asthma ER Admissions	29.6
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	29.9
Cognitively Disabled	28.0
Physically Disabled	7.8
Heart Attack ER Admissions	26.8
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	0.0
SLR Inundation Area	77.3

Children	86.0
Elderly	1.3
English Speaking	64.4
Foreign-born	25.0
Outdoor Workers	14.1
Climate Change Adaptive Capacity	—
Impervious Surface Cover	72.0
Traffic Density	23.1
Traffic Access	23.0
Other Indices	—
Hardship	57.9
Other Decision Support	—
2016 Voting	93.7

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	78.0
Healthy Places Index Score for Project Location (b)	50.0
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
Construction: Construction Phases	Approximation of phases based on Revised Draft IS-MND received by MBK Engineers in 7/18/2025. Phase I construction is expected to take 3 to 4 weeks while Phase II is expected to take 6 to 8 weeks. Modeling assumes maximum of the expected time range (4 weeks for Phase I and 8 weeks for Phase II).
Construction: Off-Road Equipment	Equipment and hours based on Revised Draft IS-MND received by MBK Engineers in 7/18/2025.
Construction: Trips and VMT	Based on maximum estimated trip length, personnel, and hauling trips described in Project Description given by MBK Engineers in July 2025.
Construction: On-Road Fugitive Dust	Road travel should be paved until shortly before reaching Project Area.

Table A-1. $PM_{2.5}$ emissions standardization calculations for Yolo-Solano Air Quality Management District threshold comparison.

Step	Calculation	Value
Convert lb/day to µg/day[1]	1.38 lb/day × 453,592,370 µg/lb	625,957,471 µg/day $PM_{2.5}$
Convert units for area of dispersion (Project Area)[2]	0.95 mi^2 × 2,590,000 m^2/mi^2	2,460,500 m^2
Calculate mixing volume[3]	100 m × 2,460,500 m^2	246,050,000 m^3
Calculate $PM_{2.5}$ concentration	625,957,471 µg/day ÷ 246,050,000 m^3	2.54 $\mu g/m^3$ per day

Source:

Notes: µg = microgram
lb = pound
m^2 = square meter
m^3 = cubic meter
$PM_{2.5}$ = respirable particulate matter less than 2.5 microns in diameter
YSAQMD =Yolo-Solano Air Quality Management District

[1] Project emissions estimated by California Emissions Estimator Model Version 2022.1.1.29 are 0.56 lb/day.

[2] Project Area is 0.95 mi^2.

[3] 100 m is suggested as a conservative mixing height (USEPA 2019).

Lindsey Slough Summary Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

6. Climate Risk Detailed Report

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

7. Health and Equity Details

7.3. Overall Health & Equity Scores

7.5. Evaluation Scorecard

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lindsey Slough
Construction Start Date	5/1/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	5.70
Precipitation (days)	2.20
Location	38.24561342437448, -121.70056407095126
County	Solano-Sacramento
City	Unincorporated
Air District	Yolo/Solano AQMD
Air Basin	Sacramento Valley
TAZ	878
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

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
User Defined Linear	0.95	Mile	0.00	0.00	—	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

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.	5.27	4.37	45.0	31.9	0.14	1.82	38.0	39.8	1.69	6.15	7.83	—	16,558	16,558	0.47	1.03	13.3	16,889
Mit.	5.27	4.37	45.0	31.9	0.14	1.82	34.3	36.1	1.69	4.53	6.22	—	16,558	16,558	0.47	1.03	13.3	16,889
% Reduced	—	—	—	—	—	—	10%	9%	—	26%	21%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.10	3.40	36.0	25.2	0.11	1.39	33.2	34.6	1.29	5.29	6.58	—	13,667	13,667	0.38	0.88	0.30	13,938
Mit.	4.10	3.40	36.0	25.2	0.11	1.39	30.1	31.5	1.29	3.94	5.23	—	13,667	13,667	0.38	0.88	0.30	13,938
% Reduced	—	—	—	—	—	—	9%	9%	—	26%	21%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.89	0.73	7.70	5.39	0.02	0.30	6.83	7.14	0.28	1.10	1.38	—	2,885	2,885	0.08	0.18	1.03	2,943

Mit.	0.89	0.73	7.70	5.39	0.02	0.30	6.18	6.48	0.28	0.81	1.09	—	2,885	2,885	0.08	0.18	1.03	2,943
% Reduced	—	—	—	—	—	—	10%	9%	—	26%	21%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.16	0.13	1.41	0.98	< 0.005	0.06	1.25	1.30	0.05	0.20	0.25	—	478	478	0.01	0.03	0.17	487
Mit.	0.16	0.13	1.41	0.98	< 0.005	0.06	1.13	1.18	0.05	0.15	0.20	—	478	478	0.01	0.03	0.17	487
% Reduced	—	—	—	—	—	—	10%	9%	—	26%	21%	—	—	—	—	—	—	—

6. Climate Risk Detailed Report

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	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	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	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 include implementation of climate risk reduction measures.

7. Health and Equity Details

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	78.0
Healthy Places Index Score for Project Location (b)	50.0
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.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

Appendix B

Database Query Results for Special-status Plant Species and Sensitive Natural Communities in the Lindsey Slough Levee Rehabilitation Project Region

Table B-1. Special-status plant species documented in the Project region.

Scientific name	Common name	Status[1] CRPR/State/ Federal	Query source	Blooming period	Elevation range (feet)	Habitat associations	Potential to occur within the Project Area
Astragalus tener var. *ferrisiae*	Ferris' milk-vetch	1B.1/–/–	CNPS, CNDDB	April–May	5–245	Vernally mesic meadows and seeps, and subalkaline flats in valley and foothill grassland	None; no suitable habitat is present.
Astragalus tener var. *tener*	alkali milk-vetch	1B.2/–/–	CNPS, CNDDB	March–June	5–195	Alkaline areas of playas, vernal pools, and valley and foothill grassland with adobe clay substrates	None; no suitable habitat is present.
Atriplex cordulata var. *cordulata*	heartscale	1B.2/–/–	CNPS, CNDDB,	April–October	0–1,835	Sometimes saline or alkaline areas of chenopod scrub, meadows and seeps, and sandy areas of valley and foothill grassland	None; no suitable habitat is present.
Atriplex coronata var. *coronata*	crownscale	4.2/–/–	CNPS	March–October	5–1,935	Often clay and alkaline areas of chenopod scrub, valley and foothill grassland, and vernal pools	Yes; suitable habitat may be present.
Atriplex depressa	brittlescale	1B.2/–/–	CNPS, CNDDB	April–October	5–1,050	Clay and alkaline areas of chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools	None; no suitable habitat is present.
Atriplex persistens	vernal pool smallscale	1B.2/–/–	CNPS, CNDDB	June–October	35–375	Alkaline vernal pools	None; no suitable habitat is present.
Blepharizonia plumosa	big tarplant	1B.1/–/–	CNPS, CNDDB	July–October	100–1,655	Usually clay substrates of valley and foothill grassland	None; outside elevation range of Project Area
Brasenia schreberi	watershield	2B.3/– /–	CNPS, CNDDB	June–September	0–7,220	Freshwater marshes and swamps	Unlikely; suitable habitat is limited.

Scientific name	Common name	Status[1] CRPR/State/ Federal	Query source	Blooming period	Elevation range (feet)	Habitat associations	Potential to occur within the Project Area
Carex comosa	bristly sedge	2B.1/–/–	CNPS, CNDDB	May–September	0–2,050	Coastal prairie, margins of marshes and swamps, and valley and foothill grassland	Yes; suitable habitat may be present.
Centromadia parryi subsp. *parryi*	pappose tarplant	1B.2/–/–	CNPS, CNDDB	May–November	0–1,380	Often alkaline areas of chaparral, coastal prairie, coastal salt marshes and swamps, meadows and seeps, and vernally mesic valley and foothill grassland.	Yes; suitable habitat may be present.
Centromadia parryi subsp. *rudis*	Parry's rough tarplant	4.2/–/–	CNPS	May–October	0–330	Vernally mesic and alkaline areas of valley and foothill grassland, and vernal pools, sometimes including roadsides.	Yes; suitable habitat may be present.
Chloropyron molle subsp. *molle*	soft salty bird's-beak	1B.2/CR/FE	CNPS, CNDDB	June–November	0–10	Coastal salt marshes and swamps.	None; no suitable habitat is present.
Cicuta maculata var. *bolanderi*	Bolander's water-hemlock	2B.1/–/–	CNPS, CNDDB	July–September	0–655	Brackish, coastal or freshwater marshes and swamps.	Unlikely; suitable habitat is limited.
Convolvulus simulans	small–flowered morning–glory	4.2/–/–	CNPS, CNDDB–	March–July	100–2,430	Seeps and clay or serpentine substrates in chaparral openings, coastal scrub, and valley and foothill grassland.	None; outside elevation range of Project Area
Cryptantha hooveri	Hoover's cryptantha	1A/–/–	CNPS, CNDDB	April–May	30–490	Inland dunes, and sandy substrates of valley and foothill grassland.	None; no suitable habitat is present.
Downingia pusilla	dwarf downingia	2B.2/–/–	CNPS, CNDDB	March–May	5–1,460	Mesic areas of valley and foothill grassland, vernal pools.	Yes; suitable habitat may be present.
Eleocharis parvula	small spikerush	4.3/–/–	CNPS	(April) June–August (September)	5–9,910	Marshes and swamps	Unlikely, suitable habitat limited.

Scientific name	Common name	Status[1] CRPR/State/ Federal	Query source	Blooming period	Elevation range (feet)	Habitat associations	Potential to occur within the Project Area
Eriogonum nudum var. psychicola	Antioch Dunes buckwheat	1B.1/–/–	CNPS, CNDDB	July–October	0–65	Inland dunes	None; no suitable habitat is present.
Eriogonum truncatum	Mt. Diablo buckwheat	1B.1/–/–	CNPS, CNDDB	April–September (November–December)	10–1,150	Sandy areas of chaparral, coastal scrub, and valley and foothill grassland	None; no suitable habitat is present.
Erysimum capitatum var. *angustatum*	Contra Costa wallflower	1B.1/CE/FE	CNPS, CNDDB	March–July	10–65	Inland dunes	None; no suitable habitat is present.
Eschscholzia rhombipetala	diamond–petaled California poppy	1B.1/–/–	CNPS, CNDDB	March–April	0–3,200	Alkaline and clay areas of valley and foothill grassland	None; no suitable habitat is present.
Extriplex joaquinana	San Joaquin spearscale	1B.2/–/–	CNPS, CNDDB	April–October	5–2,740	Alkaline areas of chenopod scrub, meadows and seeps, playas, and valley and foothill grassland	None; no suitable habitat is present.
Fritillaria agrestis	stinkbells	4.2/–/–	CNPS	March–June	35–5,100	Clay and sometimes serpentine areas of chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland	None; no suitable habitat is present.
Fritillaria liliacea	fragrant fritillary	1B.2/–/–	CNPS, CNDDB	February–April	10–1,345	Often serpentine areas of cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland	Yes; suitable habitat may be present.
Gratiola heterosepala	Boggs Lake hedge-hyssop	1B.2/CE/–	CNPS, CNDDB	April–August	35–7,790	Clay areas of marsh and swamp margins, and vernal pools	None; no suitable habitat is present.
Hesperevax caulescens	hogwallow starfish	4.2/–/–	CNPS	March–June	0–1,655	Mesic clay and sometimes alkaline areas of valley and foothill grassland, and shallow vernal pools	None; no suitable habitat is present.
Hibiscus lasiocarpos var. *occidentalis*	woolly rose-mallow	1B.2/–/–	CNPS, CNDDB	June–September	0–395	Freshwater marshes and swamps	Unlikely; suitable habitat is limited.

Scientific name	Common name	Status[1] CRPR/State/ Federal	Query source	Blooming period	Elevation range (feet)	Habitat associations	Potential to occur within the Project Area
Isocoma arguta	Carquinez goldenbush	1B.1/–/–	CNPS, CNDDB	August–December	5–65	Alkaline areas of valley and foothill grassland	None; no suitable habitat is present.
Lasthenia chrysantha	alkali-sink goldfields	1B.1/–/–	CNPS, CNDDB	February–April	0–655	Alkaline areas of vernal pools	None; no suitable habitat is present.
Lasthenia conjugens	Contra Costa goldfields	1B.1/–/FE	CNPS, CNDDB	March–June	0–1,540	Mesic areas in cismontane woodland, alkaline areas of playas, valley and foothill grassland, and vernal pools	Yes; suitable habitat may be present.
Lasthenia glabrata subsp. *coulteri*	Coulter's goldfields	1B.1/–/–	CNPS, CNDDB	February–June	5–4,005	Coastal salt marshes and swamps, playas, and vernal pools	None; no suitable habitat is present.
Lathyrus jepsonii var. *jepsonii*	Delta tule pea	1B.2/–/–	CNPS, CNDDB	May–July (August–September)	0–15	Brackish and freshwater marshes and swamps	Unlikely; previously documented adjacent to the Project Area; however, no suitable habitat is currently present.
Legenere limosa	legenere	1B.1/–/–	CNPS, CNDDB	April–June	5–2,885	Vernal pools	None; no suitable habitat is present.
Lepidium latipes var. *heckardii*	Heckard's pepper-grass	1B.2/–/–	CNPS, CNDDB	March–May	5–655	Alkaline flats of valley and foothill grassland	None; no suitable habitat is present.
Lilaeopsis masonii	Mason's lilaeopsis	1B.1/CR/–	CNPS, CNDDB	April–November	0–35	Brackish and freshwater marshes and swamps, and riparian scrub	None; no suitable habitat is present.
Limosella australis	Delta mudwort	2B.1/–/–	CNPS, CNDDB	May–August	0–10	Brackish and freshwater marshes and swamps, and riparian scrub streambanks	Unlikely; suitable habitat is limited.

Scientific name	Common name	Status[1] CRPR/State/ Federal	Query source	Blooming period	Elevation range (feet)	Habitat associations	Potential to occur within the Project Area
Lupinus albifrons subsp. *abramsii*	Abrams' lupine	3.2/–/–	CNPS, CNDDB	April–June	410–6,560	Sometimes serpentine areas of broadleafed upland forest, chaparral, coastal scrub, lower montane coniferous forest, and valley and foothill grassland	None; outside elevation range of Project Area.
Myosurus minimus subsp. *apus*	little mousetail	3.1/–/–	CNPS	March–June	65–2,100	Valley and foothill grassland, and alkaline vernal pools	None; outside elevation range of Project Area.
Navarretia leucocephala subsp. *bakeri*	Baker's navarretia	1B.1/–/–	CNPS, CNDDB	April–July	15–5,710	Mesic areas of cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, and vernal pools	Yes; suitable habitat may be present.
Neostapfia colusana	Colusa grass	1B.1/CE/FT	CNPS, CNDDB, USFWS	May–August	15–655	Adobe clay vernal pools	None; no suitable habitat is present.
Oenothera deltoides subsp. *howellii*	Antioch Dunes evening–primrose	1B.1/CE/FE	CNPS, CNDDB	March–September	0–100	Inland dunes	None; no suitable habitat is present.
Plagiobothrys hystriculus	bearded popcornflower	1B.1/–/–	CNPS, CNDDB	April–May	0–900	Mesic areas of valley and foothill grassland, and margins of vernal pools	Yes; suitable habitat may be present.
Potamogeton zosteriformis	bearded popcornflower	1B.1/–/–	CNPS, CNDDB	April–May	0–900	Freshwater marshes and swamps	Unlikely; suitable habitat is limited.
Psilocarphus brevissimus var. *multiflorus*	eel–grass pondweed	2B.2/–/–	CNPS, CNDDB	June–July	0–6,105	Vernal pools	None; no suitable habitat is present.

Scientific name	Common name	Status[1] CRPR/State/ Federal	Query source	Blooming period	Elevation range (feet)	Habitat associations	Potential to occur within the Project Area
Puccinellia simplex	Delta woolly–marbles	4.2/–/–	CNPS, CNDDB	May–June	35–1,640	Alkaline and mesic areas of chenopod scrub, meadows and seeps margins, valley and foothill grassland, and vernal pools	None; no suitable habitat is present.
Sagittaria sanfordii	California alkali grass	1B.2/–/–	CNPS, CNDDB	March–May	5–3,050	Shallow and freshwater marshes and swamps	Yes; suitable habitat may be present.
Scutellaria galericulata	Sanford's arrowhead	1B.2/–/–	CNPS, CNDDB	May–October (November)	0–2,135	Lower montane coniferous forest, marshes and swamps, and mesic areas of meadows and seeps	Unlikely; suitable habitat is limited.
Scutellaria lateriflora	marsh skullcap	2B.2/–/–	CNPS, CNDDB	June–September	0–6,890	Marshes and swamps, and mesic areas of meadows and seeps	Unlikely; suitable habitat is limited.
Senecio hydrophiloides	side–flowering skullcap	2B.2/–/–	CNPS, CNDDB	July–September	0–1,640	Mesic areas of lower montane coniferous forest, and meadows and seeps	None; no suitable habitat is present.
Sidalcea keckii	Keck's checkerbloom	1B.1/–/FE	CNPS, CNDDB, USFWS	April–May(June)	245–2,135	Clay or serpentine areas of cismontane woodland, and valley and foothill grassland	None; outside elevation range of Project Area
Spergularia macrotheca var. *longistyla*	long-styled sand-spurrey	1B.2/–/–	CNPS	February–May	0–835	Alkaline meadows and seeps, marshes and swamps	None; outside elevation range of Project Area.
Stuckenia striata	broadleaf pondweed	2B.3/–/–	CNPS, CNDDB	(June) July–August	-230–7,005	Marshes and swamps	Unlikely; suitable habitat is limited.
Symphyotrichum lentum	Suisun Marsh aster	1B.2/–/–	CNPS, CNDDB	(April)May–November	0–10	Brackish and freshwater marshes and swamps	Yes; previously documented adjacent to the Project Area.
Trifolium hydrophilum	saline clover	1B.2/–/–	CNPS, CNDDB	April–June	0–985	Marshes and swamps, mesic and alkaline areas of valley and foothill grassland, and vernal pools	Unlikely; suitable habitat is limited.

Scientific name	Common name	Status[1] CRPR/State/ Federal	Query source	Blooming period	Elevation range (feet)	Habitat associations	Potential to occur within the Project Area
Tuctoria mucronata	Crampton's tuctoria or Solano grass	1B.1/CE/FE	CNPS, CNDDB, USFWS	April–August	15–35	Mesic areas of valley and foothill grassland, and vernal pools	None; no suitable habitat is present. Only grows in northern claypan type vernal pools, which are not present within the Project Area (CDFW 2013[2]).

Notes: CNPS = California Native Plant Society
CNDDB = California Natural Diversity Database
USFWS = U.S. Fish and Wildlife Service

[1] Status:
Federal
FE Federally listed as endangered
FT Federally listed as threatened
– No federal status
State
CE State listed as endangered
CR State listed as rare
– No state status

California Rare Plant Rank (CRPR)
1A Plants presumed extirpated in California and rare or extinct elsewhere
1B Plants rare, threatened, or endangered in California and elsewhere
2B Plants rare, threatened, or endangered in California, but more common elsewhere
3 More information needed about this plant, a review list
4 Plants of limited distribution, a watch list

CRPR Threat Ranks:
0.1 Seriously threatened in California (high degree/immediacy of threat)
0.2 Fairly threatened in California (moderate degree/immediacy of threat)
0.3 Not very threatened in California (low degree/immediacy of threats or no current threats known)

[2] CDFW (California Department of Fish and Wildlife). 2013. Solano Grass (*Tuctoria mucronata*). Prepared by CDFW, Sacramento California. Available at: https://wildlife.ca.gov/Conservation/Plants/Endangered/Tuctoria-mucronata.

Table B-2. CNDDB query results for sensitive natural communities documented in the Lindsey Slough Levee Rehabilitation Project region.

Natural community (Holland 1986)	Status	Distribution[1]	Habitat description[1]	Potential sensitive vegetation alliances (state rank)[2]	Potential to occur within the Project Area
Coastal and Valley Freshwater Marsh	S2.1	Remnant stands are most extensive in the upper portion of the Sacramento-San Joaquin River Delta, in river oxbows and other areas on the floodplain. Occurs occasionally along the coast, in coastal valleys near river mouths, and around the margins of lakes and springs.	Quiet sites (lacking significant current) permanently flooded by fresh water (rather than brackish, alkaline, or variable).	• *Carex obnupta–Oenanthe sarmentosa–Scirpus microcarpus* (S3) • *Deschampsia cespitosa–Hordeum brachyantherum–Danthonia californica* (S3) • *Hydrocotyle* (*ranunculoides, umbellata*) (S3?) • *Isoetes* (*bolanderi, echinospora, howellii, nuttallii, occidentalis*) (S3?) • *Nuphar lutea* (S3?) • *Schoenoplectus americanus* (S3.2) • *Scirpus microcarpus* (S2)	None; structure not present.
Coastal Brackish Marsh	S2.1	Usually at the interior edges of coastal bays and estuaries or in coastal lagoons. Adjacent to several salt marshes. Most extensively developed around Suisun Bay at the mouth of the Sacramento-San Joaquin Delta.	Brackish from freshwater input. Salinity may vary considerably and may increase at high tide or during seasons of low freshwater runoff or both.	• *Bolboschoenus maritimus* (S3) • *Carex lyngbyei* (S1) • *Carex obnupta–Oenanthe sarmentosa–Scirpus microcarpus* (S3) • *Grindelia* (*stricta*) (S2S3) • *Ruppia* (*cirrhosa, maritima*) (S2) • *Stuckenia* (*pectinata*)*–Potamogeton* spp. (S3?)	None; incorrect distribution and no habitat.
Northern Claypan Vernal Pool	S1.1	Primarily on old alluvial terraces on the east side of the Great Valley from Tulare or Fresno County north to Shasta County.	Old, circum-neutral to alkaline, Fe-Si cemented hardpan soils.	• *Centromadia* (*pungens*) (S2) • *Cressa truxillensis–Distichlis spicata* (S2) • *Eryngium aristulatum* (S2) • *Lasthenia fremontii–Distichlis spicata* (S2)	None; species and structure not present

Natural community (Holland 1986)	Status	Distribution[1]	Habitat description[1]	Potential sensitive vegetation alliances (state rank)[2]	Potential to occur within the Project Area
Stabilized Interior Dunes	S1.1	Occurs in the lower reaches of the Sacramento-San Joaquin River Delta. Has been widely impacted by agricultural development.	Along riverbanks where wind-driven deposition is common.	• *Atriplex polycarpa* Shrubland Alliance (Alltail scrub)	None; species and structure not present.
Valley Needlegrass Grassland	S3.1	Formerly extensive around the Sacramento, San Joaquin, and Salinas Valleys, as well as the Los Angeles Basin, but now much reduced.	Usually on fine-textured (often clay) soils, moist or even waterlogged during winter, but very dry in summer.	• *Nassella* spp.–*Melica* spp. (S3S4)	None; species and structure not present.

Notes: S1 = Critically Imperiled: At very high risk of extinction due to extreme rarity, very steep declines, or other factors
S2 = Imperiled: At high risk of extinction or elimination due to very restricted range, very few populations, steep declines, or other factors
S3 = Vulnerable: At moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent declines, or other factors
0.1 = Very threatened

[1] Source: Holland, R. F. 1986. Preliminary descriptions of the terrestrial natural communities of California. California Department of Fish and Game, Nongame-Heritage Program, Sacramento, California.

[2] Source: CNPS (California Native Plant Society). 2025. A Manual of California Vegetation, Online Edition. Available at: http://www.cnps.org/cnps/vegetation/ [Accessed April 2025]. Prepared by California Native Plant Society, Sacramento, California.

Appendix C

Database Query Results for Special-status Wildlife Species in the Lindsey Slough Levee Rehabilitation Project Region

Table C-1. Special-status wildlife species with potential to occur within the Lindsey Slough Levee Rehabilitation Project region.

Common name *Scientific name*	Query Sources	Status[a] Federal/ State	Distribution in California	Habitat Association	Likelihood to Occur in Project Area
Invertebrates					
Conservancy fairy shrimp *Branchinecta conservatio*	CDFW, USFWS	FE/–	California Central Valley from Tehama Couty in the north to Merced County in the south; one outlying population in Ventura County's Interior Coast Ranges; found up to 5,577 ft in elevation.	Relatively large, turbid freshwater vernal pools (playa pools) in annual grasslands.	None; no vernal pools are present.
Vernal pool fairy shrimp *Branchinecta lynchi*	CDFW, USFWS	FT/–	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County; isolated populations also in Riverside County.	Vernal pools; also found in sandstone rock outcrop pools.	None; no vernal pools are present.
Vernal pool tadpole shrimp *Lepidurus packardi*	CDFW, USFWS	FE/–	Shasta County south to Merced County.	Vernal pools and ephemeral stock ponds.	None; no vernal pools are present.
Western bumble bee *Bombus occidentalis*	CDFW	–/SCE	Historically throughout northern California and adjacent states; the once common populations of central California have largely disappeared (Evans et al. 2008).	Forages on flowering plants in meadows and forested openings; abandoned rodent burrows are used for nests and hibernation sites for queens; host plant genera include, but not limited to, *Ceanothus, Centaurea, Chrysothamnus, Cirsium, Geranium, Grindellia, Lupinus, Melilotus, Monardella, Rubus, Solidago,* and *Trifolium*.	Low; species has dramatically declined across western and central California (Evans et al. 2008); few flowering plants for foraging and no rodent burrows for nesting within the Project Area; no observations within 5 miles of the Project Area (CDFW 2025a,b; The Xerces Society 2025).

Common name ***Scientific name***	**Query Sources**	**Status[a] Federal/ State**	**Distribution in California**	**Habitat Association**	**Likelihood to Occur in Project Area**
Crotch's bumble bee *Bombus crotchii*	CDFW	–/SCE	Mediterranean region, Pacific Coast, Western Desert, Great Valley, and adjacent foothills through most of southwestern California.	Inhabits open grassland and scrub habitats. Nests are often located underground in abandoned rodent burrows, or above ground in tufts of grass, rock piles, or tree cavities.	Low; suboptimal managed (e.g., mowed) grassland habitat present within Project Area; no rodents or burrows observed within Project Area; no observations within 10 miles of the Project Area (CDFW 2025a,b; The Xerces Society 2025).
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	CDFW, USFWS	FT/–	Riparian habitat in the Central Valley below 3,000 ft, most commonly in lowlands between 0 500 ft.	Riparian and oak savanna habitats with host plant elderberry (*Sambucus* spp.).	None; no elderberry observed within the Project Area.
Delta green ground beetle *Elaphrus viridus*	CDFW	FT/–	Only known to occur in Solano County.	Grassland habitat interspersed with vernal pools.	None; no suitable habitat within Project Area.
Lange's metalmark butterfly *Apodemia mormo langei*	CDFW	FE/–	Antioch Sand Dunes in Contra Costa County.	Dunes; larval food plant is nakedstem buckwheat (*Eriogonum nudum* subsp. *auriculatum*); adult nectar plants include buckwheat, butterweed (*Senecio douglasii*) and snakeweed (*Gutierrezia divergens*).	None; Project Area is outside species' known range (USFWS 2008).
Monarch butterfly *Danaus plexippus*	CDFW, USFWS	FPT/–	Range includes most of California; breeds throughout California and overwinters in suitable groves along the California coast.	Adults forage on a variety of flowering plants during breeding and migration; larvae (caterpillars) require milkweed (*Asclepias* spp.) as a host plant. Overwinter roosts include eucalyptus (*Eucalyptus* spp.), Monterey pine (*Pinus radiata*), or Monterey cypress (*Cupressus macrocarpa*) trees or groves.	Low; no milkweed and few flowering plants observed in Project Area; no observations within 10 miles of the Project Area (CDFW 2025a,b); no overwintering tree habitat or sites near the Project Area (The Xerces Society Western Monarch Count 2025).

Common name *Scientific name*	Query Sources	Status[a] Federal/ State	Distribution in California	Habitat Association	Likelihood to Occur in Project Area
Amphibians					
California tiger salamander, central California DPS *Ambystoma californiense*	CDFW, USFWS	FT/ST	Fragmented populations in the Central Valley and Sierra foothills from northern Yolo County to northwestern Kern County and Tulare County, and along the Coast Ranges from San Mateo County to Central San Luis Obispo.	Grassland, oak savannah, or edges of woodland that provide subterranean refuge (typically mammal burrows); breeds in nearby temporary ponds, vernal pools, or slow-moving parts of streams.	Low; suboptimal grassland habitat adjacent to Project Area; no vernal pools in the Project vicinity; critical habitat has been designated for this species and is not present within the Project Area; observations of adults and larvae have been documented approximately 6–10 miles northwest of the Project Area near the neighborhoods of Olcott and Creed (CDFW 2025a,b).
Western spadefoot *Spea hammondii*	CDFW, USFWS	FPT/SSC	Near Redding, south throughout the Central Valley and nearby foothills; Coast Ranges south of Monterey Bay; and coastal southern California south of the Transverse Mountains and west of the Peninsular Mountains.	Areas with sparse vegetation and/or short grasses in friable soils; primarily in washes, river floodplains, alluvial fans, playas, alkali flats, among grasslands, chaparral, or pine-oak woodlands; breeds in ephemeral pools, cattle ponds, slow sections of streams, and other shallow water bodies with low levels of canopy cover.	Very low; suboptimal grassland and aquatic habitat; no observations within 10 miles of Project Area (CDFW 2025a,b).

Common name *Scientific name*	Query Sources	Status[a] Federal/ State	Distribution in California	Habitat Association	Likelihood to Occur in Project Area
Reptiles					
Northwestern pond turtle *Actinemys marmorata*	CDFW, USFWS	FPT/SSC	Range is from the Oregon border along the coast ranges to the northern San Francisco Bay area as well as the Central Valley, Cascades, and Sierras	Permanent, slow-moving fresh or brackish water with available basking sites and adjacent open habitats or forest for nesting.	High; additional assessment included in Section 2.4.1.
Northern California legless lizard *Anniella pulchra*	CDFW	–/SSC	Fragmented populations in the San Joaquin Valley, from Contra Costa County to Ventura County.	Sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces; warm, moist, loose soil for burrowing.	None; Project Area is outside of species' known range (CDFW 2021).
Coast horned lizard *Phrynosoma blainvillii*	CDFW	-/SSC	West of deserts and Cascade-Sierran highlands, as far north as Shasta Reservoir.	Found in grasslands, coniferous forests, woodlands, and chaparral amongst open or low vegetation and patches of loose sandy soil such as along dirt roads and sandy washes; forages on ants at ant hills.	None; suboptimal habitat in Project Area consisting of hard packed soils and ruderal vegetation; no observations within 10 miles of Project Area (CDFW 2025a,b).
Giant garter snake *Thamnophis gigas*	CDFW	FT/ST	Central Valley from the vicinity of Burrel in Fresno County north to near Chico in Butte County; has been extirpated from areas south of Fresno.	Sloughs, canals, low- gradient streams and freshwater marsh habitats where there is a prey base of small fish and amphibians; also found in irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter.	High; additional assessment included in Section 2.4.1.
California glossy snake *Arizona elegans occidentalis*	CDFW	–/SSC	Inland areas South of San Francisco Bay to Santa Barbara, where distribution extends along coastal regions to Baja Mexico.	Habitat generalist; prefers scrub and grassland with loose or sandy soils.	None; Project Area is outside species' known range (CDFW 2021).

Common name *Scientific name*	Query Sources	Status[a] Federal/ State	Distribution in California	Habitat Association	Likelihood to Occur in Project Area
Birds					
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	CDFW	FT/SE	Species breeds in limited portions of the Sacramento River and the South Fork Kern River; small populations may nest in Butte, Yuba, Sutter, San Bernardino, Riverside, Inyo, Los Angeles, and Imperial counties.	Summer resident of valley foothill and desert riparian habitats; nests in open woodland with clearings and low, dense, scrubby vegetation.	Very low; no suitable large patches of riparian vegetation for nesting; populations in California are greatly reduced (Bennett and Keinath 2003); no observations documented within 10 miles of Project Area (CDFW 2025a,b).
California Ridgway's rail *Rallus obsoletus obsoletus*	USFWS	FE/SE, SFP	Predominantly in the tidal marshes of the San Francisco estuary: South San Francisco Bay, North San Francisco Bay, San Pablo Bay, and sporadically throughout the Suisun Marsh area east to Browns Island.	Salt and brackish water marshes, typically dominated by pickleweed and Pacific cordgrass (*Sporobolus foliosus* [syn. *Spartina foliosa*]).	None; Project Area is outside the species' known range (USFWS 2013).
California black rail *Laterallus jamaicenis coturniculus*	CDFW	–/ST, SFP	Northern San Francisco Bay area (primarily San Pablo and Suisun bays) and Sacramento-San Joaquin Delta.	Large tidally-influenced marshes with saline to brackish water, typically with a high proportion of pickleweed (*Salicornia pacifica*); also, can be associated with bulrush (*Schoenoplectus* spp.), cattail (*Typha* spp.), or rushes (*Juncus* spp.); peripheral vegetation at and above mean high higher water necessary to protect nesting birds during extremely high tides.	Low; no intact tidal marsh habitat within the Project Area; nearby Lindsey Slough contains a very small amount of tidal marsh insufficient for nesting; several black rails were aurally detected in Lindsey Slough and Barker Slough as recently as 2015, approximately 4–5 miles west to northwest of the Project Area (CDFW 2025a).
Greater sandhill crane *Grus canadensis tabida*	CDFW	–/ST, SFP	Winter visitor and migrant; scattered locations in the Central Valley; breeds in extreme northeastern California.	Forages in freshwater marshes and grasslands as well as harvested rice fields, corn stubble, barley, and newly planted grain fields.	High (foraging only); additional assessment included in Section 2.4.1.

Common name ***Scientific name***	**Query Sources**	**Status[a] Federal/ State**	**Distribution in California**	**Habitat Association**	**Likelihood to Occur in Project Area**
Lesser sandhill crane *Grus canadensis canadensis*	CDFW	–/SSC	Winter visitor and migrant; scattered locations in the Central Valley.	Forages in freshwater marshes and grasslands as well as harvested rice fields, corn stubble, barley, and newly planted grain fields.	High (foraging only); additional assessment included in Section 2.4.1.
Mountain plover *Charadrius montanus*	CDFW	–/SSC	Winter visitor; found in the Central Valley south of Yuba County, along the coast in parts of San Luis Obispo, Santa Barbara, Ventura, and San Diego counties; parts of Imperial, Riverside, Kern, and Los Angeles counties.	Occupies open plains or rolling hills with short grasses or very sparse vegetation; nearby bodies of water are not needed; may use newly plowed or sprouting grain fields.	None; Project Area is not within the nesting range of the species and lacks suitable nesting and foraging habitat; closest observations are in agricultural areas approximately 5 miles southwest of the Project Area in February 2025 (eBird 2025).
Western snowy plover *Charadrius alexandrinus nivosus*	CDFW	FT (Pacific coastal population)/ SSC (interior population)	Species nests in locations along the California coast, including the Eel River in Humboldt County; nests in the interior of the state in the Central Valley, Klamath Basin, Modoc Plateau, and Great Basin, Mojave, and Colorado deserts; winters primarily along coast.	Barren to sparsely vegetated beaches, barrier beaches, salt-evaporation pond levees, and shores of alkali lakes; also nests on gravel bars in rivers with wide flood plains; needs sandy, gravelly, or friable soils for nesting.	None; Project Area is outside of the species' known range (USFWS 2025).
California least tern *Sternula antillarum browni*	CDFW	FE/SE, SFP	Pacific coast from San Francisco to Baja California.	Sparsely vegetated coastal beaches and estuaries near shallow waters, above high tide line.	None; no suitable nesting or foraging habitat within the Project Area; nearest nesting colony is 12 miles southwest on Montezuma slough (CDFW 2025a).
American white pelican *Pelecanus erythrorhyncos*	CDFW	–/SSC	Breeds on lakes in the Klamath Basin, winters along the Pacific coast from Sonoma County south to Baja California and in the Central Valley.	Salt ponds, large lakes, and estuaries; loafs on open water during the day; roosts along water's edge at night.	Moderate (foraging only); additional assessment included in Section 2.4.1.
White-tailed kite *Elanus leucurus*	CDFW	–/SFP	Year-round resident; found in nearly all lowlands of California west of the Sierra Nevada mountains and the southeast deserts.	Lowland grasslands and wetlands with open areas; nests in trees near open foraging area.	High (foraging and nesting); additional assessment included in Section 2.4.1.

Common name ***Scientific name***	**Query Sources**	**Status[a] Federal/ State**	**Distribution in California**	**Habitat Association**	**Likelihood to Occur in Project Area**
Golden eagle *Aquila chrysaetos*	CDFW, USFWS	BGEPA/ SFP	Species is an uncommon permanent resident and migrant throughout California, except center of Central Valley.	Open woodlands and oak savannahs, grasslands, chaparral, sagebrush flats; nests on steep cliffs or medium to tall trees.	Moderate (foraging only); additional assessment included in Section 2.4.1.
Northern harrier *Circus hudsonius*	CDFW	–/SSC	Year-round resident; scattered throughout California; in the northwest, nests largely within coastal lowlands from Del Norte County south to Bodega Head in Sonoma County, inland to Napa County.	Nests, forages, and roosts in wetlands or along rivers or lakes, but also in grasslands, meadows, or grain fields.	High (foraging only); additional assessment included in Section 2.4.1.
Bald eagle *Haliaeetus leucocephalus*	CDFW, USFWS	FD, BGEPA/ SE, SFP	Species is a permanent resident and uncommon winter migrant, found nesting primarily in Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity counties.	Large bodies of water or rivers with abundant fish, uses snags or other perches; nests in advanced-successional conifer forest near open water.	Moderate (foraging only); additional assessment included in Section 2.4.1.
Swainson's hawk *Buteo swainsoni*	CDFW	–/ST	Summer resident; breeds in lower Sacramento and San Joaquin valleys, the Klamath Basin, and Butte Valley; highest nesting densities occur near Davis and Woodland, Yolo County.	Nests in oaks or cottonwoods in or near riparian habitats; forages in grasslands, irrigated pastures, and grain fields.	High (foraging and nesting); additional assessment included in Section 2.4.1.
Western burrowing owl *Athene cunicularia hypugaea*	CDFW	–/SCE, SSC	Year-round resident throughout much of the state; Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along south coast.	Level, open, dry, heavily grazed or low-stature grassland or desert vegetation with available burrows.	Moderate (foraging and nesting); additional assessment included in Section 2.4.1.
Long-eared owl *Asio otus*	CDFW	–/SSC	Uncommon resident throughout the state, does not occupy the Central Valley and Southern California deserts.	Riparian habitat; nests in dense vegetation close to open grassland, meadows, riparian, or wetland areas for foraging.	None; Project Area lacks suitable nesting habitat and is at edge of the species' range (CDFW 2021); no observations documented within 20 miles (CDFW 2025a,b).

Common name ***Scientific name***	**Query Sources**	**Status[a] Federal/ State**	**Distribution in California**	**Habitat Association**	**Likelihood to Occur in Project Area**
Short-eared owl *Asio flammeus*	eBird	–/SSC	Year-round resident in certain areas; breeding in California episodic and a widespread winter migrant, found primarily in the Central Valley, in the western Sierra Nevada foothills, and along the coastline.	Salt or freshwater marshlands, ungrazed grasslands, old pastures, and irrigated alfalfa or grain fields. Eat small mammals.	Low; Project Area is near suitable foraging habitat in marshes and agricultural fields and grassland expanses for nesting. Few individuals have been observed approximately 5 miles southwest of the Project Area in agricultural areas near Flannery Road in 2014, 2017, and 2023 (eBird 2025).
Loggerhead shrike *Lanius ludovicianus*	CDFW	–/SSC	Year-round resident in most of California except for the forested coastal slope and the high elevations of the Sierra Nevada, southern Cascade, and Transverse Ranges.	Open shrubland or woodlands with short vegetation and/or bare ground for hunting; some tall shrubs, trees, fences, or power lines for perching; typically nests in isolated trees or large shrubs.	Moderate; additional assessment included in Section 2.4.1.
Bank swallow *Riparia riparia*	CDFW	–/ST	Summer resident; occurs along the Sacramento River from Tehama County to Sacramento County, along the Feather and lower American rivers; and in the plains east of the Cascade Range in Modoc, Lassen, and northern Siskiyou counties; small populations near the coast from San Francisco County to Monterey County.	Nests in vertical bluffs or banks, usually adjacent to water, where the soil consists of sand or sandy loam.	None; Project Area is outside species' known range (CDFW 2021).

Common name ***Scientific name***	**Query Sources**	**Status[a] Federal/ State**	**Distribution in California**	**Habitat Association**	**Likelihood to Occur in Project Area**
Grasshopper sparrow *Ammodramus savannarum*	CDFW	–/SSC	Summer resident; nests in Mendocino, Trinity, and Tehama counties south, west of the Cascade–Sierra Nevada axis and southeastern deserts, to San Diego County.	Typically found in moderately open grasslands with scattered shrubs.	Low; Project Area is within summer range (CDFW 2021); suboptimal managed grassland habitat adjacent to Project Area; species aurally detected approximately 10 miles northwest in 2017 (CDFW 2025a); eBird observations are scarce, dated, and more than 6 miles from the Project Area (eBird 2025).
Song sparrow ("Modesto" population) *Melospiza melodia*	CDFW	–/SSC	Year-round resident; north-central portion of the Central Valley.	Emergent freshwater marshes, riparian willow thickets, and riparian forests.	High; additional assessment included in Section 2.4.1.
Suisun song sparrow *Melospiza melodia maxillaris*	CDFW	–/SSC	Resident of Suisun Bay.	Brackish-water marshes.	None; Project Area is outside species' known range (Shuford and Gardali 2008).
Yellow-breasted chat *Icteria virens*	CDFW	–/SSC	Uncommon summer resident and migrant in coastal California and in foothills of the Sierra Nevada.	Early-successional riparian habitats with a dense shrub layer and an open canopy.	Moderate; additional assessment included in Section 2.4.1.
Yellow-headed blackbird *Xanthocephalus xanthocephalus*	CDFW	–/SSC	Primarily a migrant and summer resident, though small numbers remain in winter; Central Valley, northeastern California, central and southern coasts, and southern deserts.	Breeds almost entirely in open marshes with relatively deep water and tall emergent vegetation, such as bulrush or cattails; nests are typically in moderately dense vegetation; forage within wetlands and surrounding grasslands and croplands.	Low; Project Area lacks suitable nesting and foraging habitat, but it is present in nearby Lindsey Slough and adjacent agricultural fields; closest observations are in agricultural areas approximately 5 miles southwest of the Project Area in February 2024 (eBird 2025).

Common name ***Scientific name***	**Query Sources**	**Status[a] Federal/ State**	**Distribution in California**	**Habitat Association**	**Likelihood to Occur in Project Area**
Tricolored blackbird *Agelaius tricolor*	CDFW	–/ST, SSC	Permanent resident, but makes extensive migrations both in breeding season and winter; common locally throughout Central Valley and in coastal areas in and south of Sonoma County.	Feeds in grasslands and agriculture fields; nesting habitat components include open accessible water, a protected nesting substrate (including flooded or thorny vegetation), and a suitable nearby foraging space with adequate insect prey.	High; additional assessment included in Section 2.4.1.
Saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	CDFW	–/SSC	San Francisco Bay region.	Brackish marsh, riparian woodland/swamp, freshwater marsh, and salt marsh often near upland habitats.	None; Project Area is outside species' known range (Shuford and Gardali 2008).
Yellow warbler *Setophaga petechia*	CDFW	–/SSC	Summer resident; nests in most of California, except most of the Central Valley, high Sierras, and Mojave and Colorado deserts.	Deciduous riparian woodland with an open canopy and close to water, along streams or wet meadows.	Moderate; additional assessment included in Section 2.4.1.
Mammals					
Salt marsh harvest mouse *Reithrodontomys raviventris*	CDFW	FE/SE, SFP	San Pablo, Suisun, and San Francisco bays in Marin, Sonoma, Napa, Solano, Contra Costa, Alameda, Santa Clara, and San Mateo counties.	Tidal salt marshes; depend on dense cover, preferring pickleweed and saltgrass.	None; Project Area is outside species' known range (CDFW 2021).
Western red bat *Lasiurus frantzii*	CDFW	–/SSC	Near the Pacific Coast, Central Valley, and the Sierra Nevada.	Roosts in foliage, primarily in riparian trees, such as sycamores and cottonwoods, while less in shrubs; woodlands near streams, fields and orchards; feeds over a wide variety of habitats including grasslands, shrublands, open woodlands and forests, and croplands.	Moderate; additional assessment included in Section 2.4.1.

Common name *Scientific name*	Query Sources	Status[a] Federal/ State	Distribution in California	Habitat Association	Likelihood to Occur in Project Area
Pallid bat *Antrozous pallidus*	CDFW	–/SSC	Throughout California except for elevations greater than 3,000 m (9,842 ft) in the Sierra Nevada.	Roosts in rock crevices, cavities in live or dead trees, mines, caves, and a variety of vacant and occupied buildings; feeds in a variety of upland habitats and most frequently in riparian, open oak savannah, and open mixed deciduous forest.	Moderate; additional assessment included in Section 2.4.1.
American badger *Taxidea taxus*	CDFW	–/SSC	Throughout the state except in the humid coastal forests of Del Norte County and the northwest portion of Humboldt County.	Shrubland, open grasslands, fields, and alpine meadows with friable soils.	Low; suboptimal grassland habitat adjacent to Project Area; no observations within 10 miles of the Project Area (CDFW 2025a,b; iNaturalist 2025).

Notes: CDFW = California Department of Fish and Wildlife
USFWS = United States Fish and Wildlife Service

[a] Status codes:

Federal
- FE = Listed as endangered under the federal Endangered Species Act
- FT = Listed as threatened under the federal Endangered Species Act
- FPT = Federally proposed as threatened
- FD = Federally delisted
- BGEPA = Federally protected under the Bald and Golden Eagle Protection Act

State
- SE = Listed as endangered under the California Endangered Species Act
- ST = Listed as threatened under the California Endangered Species Act
- SCE = State Candidate as endangered
- SSC = CDFW Species of Special Concern
- SFP = CDFW Fully Protected species

References

Bennett, J., and D.A. Keinath. 2003. Species assessment for yellow-billed cuckoo (*Coccyzus americanus*) in Wyoming. United States Department of the Interior, Bureau of Land Management. Cheyenne, Wyoming.

CDFW (California Department of Fish and Wildlife). 2021. California Wildlife Habitat Relationship System, Version 10. Prepared by CDFW, Biogeographic Data Branch, Sacramento, California.

CDFW. 2025a. California Natural Diversity Database (CNDDB), Rarefind version 5. Website. https://www.wildlife.ca.gov/data/cnddb/maps-and-data [Accessed April 2025]. Prepared by CDFW, Sacramento, California

CDFW. 2025b. Unprocessed data from CNDDB online field survey form [ds1002]. California Department of Fish and Wildlife. Biogeographic Information and Observation System (BIOS). Available at: http://bios.dfg.ca.gov.

eBird. 2025. eBird: An online database of bird distribution and abundance. Website. http://www.ebird.org [Accessed: December 2024]. Prepared by eBird, Cornell Lab of Ornithology, Ithaca, New York

Evans, E., R. Thorp, S. Jepsen, and S. H. Black. 2008. Status review of three formerly common species of bumble bee in the subgenus Bombus. Prepared by The Xerces Society, Portland, Oregon. Available at: https://xerces.org/sites/default/files/2019-10/xerces_2008_bombus_status_review_0.pdf.

iNaturalist. 2025. iNaturalist website. https://www.inaturalist.org [Accessed March 2025].

Shuford, W. D., and T. Gardali, editors. 2008. California bird species of special concern: a ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

The Xerces Society. 2025. Data accessed from Bumble Bee Watch, a collaborative website to track and conserve North America's bumble bees. Available at: https://www.bumblebeewatch.org/sightings/bee/.

The Xerces Society Western Monarch Count. 2025. Western Monarch Count Data, 1997-2025. Available at https://westernmonarchcount.org/.

USFWS (U.S. Fish and Wildlife Service). 2008. Five-year review for the Lange's metalmark butterfly (*Apodemia mormo langei*), Antioch Dunes evening-primrose (*Oenothera deltoides* subsp. *howellii*), and Contra Costa wallflower (*Erysimum capitatum* var. *angustatum*). Prepared by USFWS, Sacramento Fish and Wildlife Field Office, Sacramento, California.

USFWS. 2013. California clapper rail (*Rallus longirostris obsoletus*) 5-year review: summary and evaluation. Prepared by USFWS, Sacramento, California.

USFWS. 2025.Western snowy plover (*Charadrius nivosus nivosus*) Interactive Map Available at: https://www.fws.gov/species/western-snowy-plover-charadrius-nivosus-nivosus/map

Appendix D

Comprehensive List of Plant Species Documented during Special-status Plant Surveys for the Lindsey Slough Levee Rehabilitation Project

Table D-1. Comprehensive list of plant species documented during special-status plant surveys for the Lindsey Slough Levee Rehabilitation Project

Scientific name	Common name	Family	Nativity	Cal-IPC rating[1]
Abutilon theophrasti	velvet-leaf	Malvaceae	Non-native	–
Acmispon americanus var. *americanus*	American bird's-foot trefoil	Fabaceae	Native	–
Agrostis avenacea	Pacific bent grass	Poaceae	Non-native	Limited
Amaranthus albus	tumbleweed	Amaranthaceae	Non-native	–
Asparagus officinalis subsp. *officinalis*	garden asparagus	Asparagaceae	Non-native	–
Avena sp.	wild oat	Poaceae	Non-native	–
Brassica nigra	black mustard	Brassicaceae	Non-native	Moderate
Bromus diandrus	ripgut grass	Poaceae	Non-native	Moderate
Bromus tectorum	cheat grass, downy chess	Poaceae	Non-native	High
Capsella bursa-pastoris	shepherd's purse	Brassicaceae	Non-native	–
Carduus pycnocephalus subsp. *pycnocephalus*	Italian thistle	Asteraceae	Non-native	Moderate
Carthamus tinctorius	safflower	Asteraceae	Non-native	–
Chenopodium album	lamb's quarters	Chenopodiaceae	Non-native	–
Chenopodium berlandieri	pitseed goosefoot	Chenopodiaceae	Native	–
Conium maculatum	poison hemlock	Apiaceae	Non-native	Moderate
Convolvulus arvensis	bindweed	Convolvulaceae	Non-native	–
Croton setiger	doveweed	Euphorbiaceae	Native	–
Cynodon dactylon	Bermuda grass	Poaceae	Non-native	Moderate
Cyperus eragrostis	tall flatsedge	Cyperaceae	Native	–
Elymus ponticus	tall wheat grass	Poaceae	Non-native	–
Epilobium brachycarpum	tall annual willowherb	Onagraceae	Native	–
Erodium cicutarium	redstem filaree	Geraniaceae	Non-native	Limited
Festuca myuros	rattail sixweeks grass	Poaceae	Non-native	Moderate
Festuca perennis	rye grass	Poaceae	Non-native	Moderate
Foeniculum vulgare	fennel	Apiaceae	Non-native	Moderate
Geranium dissectum	cutleaf geranium	Geraniaceae	Non-native	Limited
Helianthus annuus	common sunflower	Asteraceae	Native	–
Helminthotheca echioides	bristly ox-tongue	Asteraceae	Non-native	Limited
Hirschfeldia incana	shortpod mustard	Brassicaceae	Non-native	Moderate
Hordeum murinum	wall barley	Poaceae	Non-native	Moderate
Juglans hindsii	northern California black walnut	Juglandaceae	Native	–
Lactuca serriola	prickly lettuce	Asteraceae	Non-native	–
Lepidium latifolium	perennial pepperweed	Brassicaceae	Non-native	High
Malva parviflora	cheeseweed, little mallow	Malvaceae	Non-native	–
Persicaria amphibia	water smartweed	Polygonaceae	Native	–

Scientific name	Common name	Family	Nativity	Cal-IPC rating[1]
Phalaris aquatica	Harding grass	Poaceae	Non-native	Moderate
Phalaris minor	little-seeded canary grass	Poaceae	Non-native	–
Pistacia sp.	pistachio	Anacardiaceae	Non-native	–
Plantago erecta	dotseed plantain	Plantaginaceae	Native	–
Polygonum aviculare subsp. *rurivagum*	prostrate knotweed	Polygonaceae	Non-native	–
Polypogon monspeliensis	annual beard grass	Poaceae	Non-native	Limited
Proboscidea lutea	yellow unicorn-plant	Martyniaceae	Non-native	–
Quercus suber	cork oak	Fagaceae	Non-native	–
Raphanus raphanistrum	jointed charlock	Brassicaceae	Non-native	–
Raphanus sativus	radish	Brassicaceae	Non-native	Limited
Rosa californica	California rose	Rosaceae	Native	–
Rubus armeniacus	Himalayan blackberry	Rosaceae	Non-native	High
Rumex crispus	curly dock	Polygonaceae	Non-native	Limited
Salix babylonica	weeping willow	Salicaceae	Non-native	–
Salix exigua	narrowleaf willow	Salicaceae	Native	–
Salix gooddingii	Goodding's black willow	Salicaceae	Native	–
Salix laevigata	red willow	Salicaceae	Native	–
Salix lasiolepis	arroyo willow	Salicaceae	Native	–
Schoenoplectus acutus var. *occidentalis*	common tule	Cyperaceae	Native	–
Silybum marianum	blessed milkthistle	Asteraceae	Non-native	Limited
Sonchus asper subsp. *asper*	prickly sow thistle	Asteraceae	Non-native	–
Sonchus oleraceus	common sow thistle	Asteraceae	Non-native	–
Sorghum halepense	Johnson grass	Poaceae	Non-native	–
Stipa miliacea var. *miliacea*	smilo grass	Poaceae	Non-native	Limited
Tribulus terrestris	punctureVine	Zygophyllaceae	Non-native	Limited
Typha sp.	cattail	Typhaceae	–	–
Vicia villosa subsp. *villosa*	winter vetch	Fabaceae	Non-native	–
Xanthium orientale	common cocklebur	Asteraceae	Native	–

Notes: Cal-IPC = California Invasive Plant Council

[1] Cal-IPC ratings (Cal-IPC [California Invasive Plant Council]. 2025. California Invasive Plant Inventory. Online database. https://www.cal-ipc.org/plants/inventory [Accessed July 2025]. Prepared by California Invasive Plant Council, Berkeley, California.):

- High: Species having severe ecological impacts to physical processes, plant and animal communities, and vegetation structure.
- Moderate: Species having substantial and apparent—but generally not severe—ecological impacts to physical processes, plant and animal communities, and vegetation structure.
- Limited: Species having minor ecological impacts to a statewide level or for which there is not enough information to justify a higher score.

Appendix E

Public Comments and Responses on the Draft IS/MND for the Lindsey Slough Levee Rehabilitation Project

Table E-1. Public Comments on the Draft Initial Study/Mitigated Negative Declaration for the Lindsey Slough Levee Rehabilitation Project.

Comment No.	Public Draft IS/MND Comments and Responses
California Department of Conservation Geologic Energy Management Division	
CalGEM-1	***Comment:*** *General Comment: Public Resources Code (PRC) section 3208.1 establishes re-abandonment responsibility when previously plugged and abandoned oil, gas or geothermal wells will be impacted by planned property development or construction activities. Local permitting agencies, property owners, and/or developers should be aware of, and fully understand, that significant and potentially dangerous issues may be associated with development near previously abandoned oil, gas, and geothermal wells.* *The California Geologic Energy Management Division (CalGEM) has received the abovereferenced project dated 8/15/2025. To assist local permitting agencies, property owners, and developers in making safe and practical land use decisions regarding potential development near oil, gas, or geothermal wells, CalGEM provides a table in the attached enclosure of the wells within the parcel boundary or in its vicinity, based on CalGEM's Well Finder database (https://maps.conservation.ca.gov/doggr/wellfinder/).* *CalGEM categorically advises against building over, or in any way impeding access to, oil, gas, or geothermal wells. Impeding access to a well could result in the need to remove any structure or obstacle that prevents or impedes access including, but not limited to, buildings, housing, fencing, landscaping, trees, pools, patios, sidewalks, roadways, and decking at the landowner's expense if there is a need to access a well. Maintaining sufficient access is considered the ability for a well servicing unit and associated necessary equipment (consisting of well servicing rig, pumping equipment, pipe trailer) to reach a well from a public street or access way, solely over the parcel on which the well is located. A well servicing unit, and any necessary equipment, should be able to pass unimpeded along and over the route, and should be able to access the well without disturbing the integrity of surrounding infrastructure. Impermeable barriers such as asphalt, concrete, and plastic may trap hazardous gases and liquids underneath and could create a safety hazard if built over a well that later develops a leak.* *CalGEM recommends that any well for which access is impeded or built over, against CalGEM's advice, should be evaluated by a qualified petroleum professional for compliance with the statutory objectives of isolating all hydrocarbon-bearing strata; protecting underground and surface waters; prevention of subsequent damage to life, health, property, and other resources; and prevention of loss of oil, gas, or reservoir energy. CalGEM recommends that wells that do not meet these standards are abandoned or re-abandoned prior to construction. The well information can be accessed through CalGEM's Well Finder database mentioned above. PRC section 3208, subdivision (a), provides the primary statutory authority for CalGEM to oversee adequate abandonment of wells. Additionally, CalGEM has developed the regulatory guidance for operators to be followed during well abandonment, which are listed within California Code of Regulation, title 14 (CCR) section 1723 and associated sub-sections (for onshore wells), and section 1745 and associated sub-sections (for offshore wells).* *There is no guarantee that a well abandoned in compliance with current Division requirements as prescribed by law will not start leaking in the future. Due to the inability to predict all subsurface conditions or changes, it always remains a possibility that any well may start to leak oil, gas, and/or water after abandonment, no matter how thoroughly the well was plugged and abandoned. CalGEM acknowledges wells plugged and abandoned to the most current Division requirements as prescribed by law have a lower probability of leaking in the future,*

Comment No.	Public Draft IS/MND Comments and Responses
	however there is no guarantee that such abandoned wells will not leak. *CalGEM advises that all wells identified on the development parcel prior to, or during, development activities be tested for liquid and gas leakage. Surveyed locations in Latitude and Longitude, NAD 83 decimal format, and leak testing results should be provided to CalGEM. CalGEM expects any wells found leaking to be reported to CalGEM immediately.* *PRC section 3208.1 gives CalGEM the authority to order or permit the re-abandonment of any well where it has reason to question the integrity of the previous abandonment. Responsibility for re-abandonment costs may be affected by the choices made by the local permitting agency, property owner, and/or developer in considering the general advice set forth in this letter. The PRC continues to define the person or entity responsible for re-abandonment as:* 1. *The property owner - If the well was plugged and abandoned in conformance with Division requirements at the time of abandonment, and in its current condition does not pose an immediate danger to life, health, and property, but requires additional work solely because the owner of the property on which the well is located proposes construction on the property that would prevent or impede access to the well for purposes of remedying a currently perceived future problem, then the owner of the property on which the well is located shall obtain all rights necessary to re-abandon the well and be responsible for the re-abandonment.* 2. *The person or entity causing construction over or near the well - If the well was plugged and abandoned in conformance with Division requirements at the time of plugging and abandonment, and the property owner, developer, or local agency permitting the construction failed either to obtain an opinion from the supervisor or district deputy as to whether the previously abandoned well is required to be re-abandoned, or to follow the advice of the supervisor or district deputy not to undertake construction that impedes access, then the person or entity causing the construction over or near the well shall obtain all rights necessary to re-abandon the well and be responsible for the re-abandonment.* 3. *The party or parties responsible for disturbing the integrity of the abandonment - If the well was plugged and abandoned in conformance with Division requirements at the time of plugging and abandonment, and after that time someone other than the operator or an affiliate of the operator disturbed the integrity of the abandonment in the course of developing the property, then the party or parties responsible for disturbing the integrity of the abandonment shall be responsible for the re-abandonment.* *Should any wells require abandonment or re-abandonment, the responsible party must submit a Notice of Intention (NOI) to CalGEM through WellSTAR. The NOI form can be accessed in the 'Plugging and Abandonment' section of the following link: https://www.conservation.ca.gov/calgem/for_operators.* *No well work may be performed on any oil, gas, or geothermal well without written approval from CalGEM. Well work requiring approval includes, but is not limited to, mitigating leaking gas or other fluids from abandoned wells, modifications to well casings, and/or any other reabandonment work. CalGEM also regulates the top of a plugged and abandoned well's minimum and maximum depth below final grade. CCR section1723.5 states well casings shall be cut off at least 5 feet but no more than 10 feet below the surface of the ground. If any well needs to be lowered or raised (i.e. casing cut down or casing riser added) to meet this regulation, a permit from CalGEM is required before*

Comment No.	Public Draft IS/MND Comments and Responses
	work can start. *CalGEM makes the following additional recommendations to the local permitting agency, property owner, and developer:* 1. *To ensure that present and future property owners are aware of (a) the existence of all wells located on the property, and (b) potentially significant issues associated with any improvements near oil or gas wells, CalGEM recommends that information regarding the below identified well(s), and any other pertinent information obtained after the issuance of this letter, be communicated to the appropriate county recorder for inclusion in the title information of the subject real property.* 2. *CalGEM recommends that any soil containing hydrocarbons be disposed of in accordance with local, state, and federal laws. Please notify the appropriate authorities if soil containing significant amounts of hydrocarbons is discovered during development.* *As indicated in PRC section 3106, CalGEM has statutory authority over the drilling, operation, maintenance, and abandonment of oil, gas, and geothermal wells, and attendant facilities, to prevent, as far as possible, damage to life, health, property, and natural resources; damage to underground oil, gas, and geothermal deposits; and damage to underground and surface waters suitable for irrigation or domestic purposes. In addition to CalGEM's authority to order work on wells pursuant to PRC sections 3208.1 and 3224, it has authority to issue civil and criminal penalties under PRC sections 3236, 3236.5, and 3359 for violations within CalGEM's jurisdictional authority. CalGEM does not regulate grading, excavations, or other land use issues.* *There are no wells within the project area.* **Response:** Comment noted.
Central Valley Regional Water Quality Control Board	
CVRWQCB-1	***Comment:*** *<u>Regulatory Setting - Basin Plan</u>* *The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.* *The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan*

Comment No.	Public Draft IS/MND Comments and Responses
	amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues. For more information on the Water Quality Control Plan for the Sacramento and San Joaquin River Basins, please visit our website: http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/ **Response:** Comment noted.
CVRWQCB-2	***Comment:*** *Regulatory Setting – Antidegradation Considerations* *All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Implementation Policy is available on page 74 at: https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_2018 05.pdf* *In part it states:* Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State. This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives. *The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.* **Response:** Addressed. The IS/MND includes an evaluation of potential impacts to both surface and groundwater quality in the Findings subsection under Section 2.10, *Hydrology and Water Quality*.
CVRWQCB-3	***Comment:*** *Permitting Requirement – Clean Water Act Section 404 Permit* *If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACE). If a Section 404 permit is required by the*

Comment No.	Public Draft IS/MND Comments and Responses
	USACE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements. If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACE at (916) 557-5250. **Response:** Comment noted.
CVRWQCB-4	***Comment:*** *Permitting Requirements - Clean Water Act Section 401 Permit – Water Quality Certification* *If an USACE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications. For more information on the Water Quality Certification, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certificatio n/* **Response:** Comment noted.
CVRWQCB-5	***Comment:*** *Permitting Requirements - Waste Discharge Requirements – Discharges to Waters of the State* *If USACE determines that only non-jurisdictional waters of the State (i.e., "nonfederal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation. For more information on the Waste Discharges to Surface Water NPDES Program and WDR processes, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/water_issues/waste_to_surface_water/* *Projects involving excavation or fill activities impacting less than 0.2 acre or 400 linear feet of non-jurisdictional waters of the state and projects involving dredging activities impacting less than 50 cubic yards of non-jurisdictional waters of the state may be eligible for coverage under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ (General Order 2004-0004). For more information on the General Order 2004-0004, visit the State Water Resources Control Board website at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/200 4/wqo/wqo2004-0004.pdf* **Response:** Comment noted.

Comment No.	Public Draft IS/MND Comments and Responses
CVRWQCB-6	***Comment:*** *Permitting Requirements - Dewatering Permit* *If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Threat General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Threat Waiver) R5-2018-0085. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.* *For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/ wqo/wqo2003-0003.pdf* *For more information regarding the Low Threat Waiver and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waiv ers/r5-2018-0085.pdf* **Response:** Comment noted.
CVRWQCB-7	***Comment:*** *Permitting Requirements - Limited Threat General NPDES Permit* *If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for Limited Threat Discharges to Surface Water (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the Limited Threat General Order. For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/gene ral_orders/r5-2016-0076-01.pdf* **Response:** Comment noted.
CVRWQCB-8	***Comment:*** *Permitting Requirements - NPDES Permit* *If the proposed project discharges waste that could affect the quality of surface waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit. For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at:*

Comment No.	Public Draft IS/MND Comments and Responses
	https://www.waterboards.ca.gov/centralvalley/help/permit/ **Response:** Comment noted.

Appendix F

Lindsey Slough Levee Rehabilitation Project Mitigation Monitoring and Reporting Program

OCTOBER 2025

Lindsey Slough Levee Rehabilitation Project Unit 1 Mitigation Monitoring and Reporting Program



PREPARED FOR

Reclamation District No. 536
Stockton, CA

PREPARED BY

Stillwater Sciences
279 Cousteau Place, Suite 400
Davis, CA 95618

and

MBK Engineers
455 University Avenue, Suite 100
Sacramento, CA 95825

Stillwater Sciences

Suggested citation:
Stillwater Sciences. 2025. Lindsey Slough Levee Rehabilitation Project Unit 1 Mitigation Monitoring and Reporting Program. Prepared by Stillwater Sciences, Davis, California and MBK Engineers, Sacramento, California for Reclamation District No. 536, Stockton, California.

Cover photo: View of the levee and landside slope, March 5, 2025.

1 INTRODUCTION

Reclamation District No. 536 (District) is planning to repair approximately 2,050 linear feet (ft) of levee at the northeast corner of the District, along the right bank of Lindsey Slough Levee (Unit 1). The Lindsey Slough Levee Rehabilitation Project Unit 1 (Project) will maintain levee integrity and provide long-term flood protection to Egbert Tract by excavating and recompacting the landside levee slope. The Project is funded under the California Department of Water Resources (DWR) as well as other funding sources.

In accordance with the California Environmental Quality Act (CEQA), the District prepared an Initial Study/Mitigated Negative Declaration (IS/MND) that identifies potential environmental effects of the Project. The District is the CEQA lead agency, and ~~the California Department of Water Resources (~~DWR~~)~~ is the CEQA responsible ~~agencies~~. The IS/MND identifies mitigation measures that would reduce or eliminate any potentially significant effects.

2 PURPOSE

In accordance with CEQA (California Public Resources Code Section 21081.6, and Section 15074[d] of the CEQA Guidelines), this Mitigation Monitoring and Reporting Program (MMRP) is designed to ensure compliance with the mitigation measures outlined in the Project's IS/MND. The results of the environmental analyses, including identified conservation and mitigation measures, are documented in the IS/MND (Stillwater Sciences and MBK Engineers 2025). This MMRP identifies the conservation and mitigation measures included in the Project to avoid or minimize potentially significant environmental impacts and includes the monitoring and/or reporting provisions that will be required to ensure proper implementation of these measures.

Table 1 provides a matrix listing the following components of this MMRP:

- Measure: conservation or mitigation measure taken verbatim from the Project's IS/MND (Stillwater Sciences and MBK Engineers 2025).
- Applicable Resources: the environmental resource(s) protected by each measure.
- Responsible Entity: the entity responsible for implementing each measure.
- Relevant Agency: the agency or agencies with interest in the resources protected by each measure and the applicable mitigation.
- Measure Timing: a general schedule for implementing each measure.
- Action: steps taken to verify implementation of the measures.

Table 1. Conservation and Mitigation Monitoring and Reporting Program for the Lindsey Slough Levee Rehabilitation Project.

Measure	Applicable Resources	Responsible Entity	Relevant Agency	Measure Timing	Action
Conservation Measures					
CM-1. The following best management practices (BMPs) will be implemented during Project construction to prevent, control, and minimize emissions: a) All diesel-fueled construction equipment will be in compliance with the California Air Resources Board's (CARB's) In-Use Off-Road Diesel-Fueled Fleets Regulation. b) All construction equipment will be properly tuned and maintained prior to and for the duration of on-site operation. c) Diesel-powered construction equipment idling time will be minimized to the extent feasible. d) Water will be applied as needed to control dust and to prevent visible emissions violations and off-site dust impacts. e) Traffic speeds on all unpaved surfaces will be limited to 20 miles per hour or less. f) Ground cover will be re-established within the Project Area as soon as possible after construction.	Air Quality, Biological Resources, Energy, Greenhouse Gas Emissions	Primary Construction Contractor	YSAQMD	Prior to and ongoing during construction	Implement all identified measures and BMPs to minimize emissions and wildlife collisions during construction. Summarize and report equipment usage to YSAQMD
CM-2. Prior to beginning Project activities each day or before moving vehicles or equipment, staging areas and areas under and around vehicles and equipment will be scanned for wildlife. If any wildlife is observed in the Project footprint, activities within the immediate vicinity will cease and the animal will be allowed to move out of the area on its own.	Biological Resources	District ~~and Biological Contractor~~	CDFW	Ongoing during construction	Monitor activities with the potential to affect sensitive biological resources
CM-3. Prior to Project construction, a Stormwater Pollution Prevention Plan (SWPPP) that will include, but not be limited to, the following BMPs to avoid and minimize potential impacts to water quality in surrounding waterways from erosion will be developed: a) Construction will occur only during dry periods that are defined as (1) less than 0.25 inch of precipitation during the preceding 24 hours, and (2) no precipitation falling during active construction. b) Prior to storm events, all construction activities will cease, and appropriate erosion control measures will be implemented. c) Soil, silt, or other organic materials will not be placed, stockpiled, or stored where such materials could pass into surface water or surface water drainage courses during unexpected rain events. d) All areas disturbed by Project activities will be protected from washout or erosion prior to the onset of the rainy season. e) All temporarily affected areas will be restored to preconstruction contours and conditions upon completion of construction activities. Any areas with bare ground will be re-seeded with a native seed mix. f) Prior to initiation of work, erosion control measures will be used throughout all phases of operation where silt and/or earthen fill have the potential to enter Waters of the United States and/or State.	Geology and Soils, Hydrology and Water Quality	Primary Construction Contractor	CVRWQCB	Prior to and ongoing during construction	Implement all identified BMPs such that potential impacts on waters from erosion are avoided or minimized
CM-4. The Project SWPPP will include, but not be limited to, the following BMPs to avoid and minimize potential impacts from hazards and hazardous materials: a) No potentially hazardous materials will be stored in a location where there is potential for them to enter any waterway and/or contaminate aquatic resources. b) All construction materials with the potential to pollute runoff will be handled with care and stored under cover or surrounded by berms during wet weather or when rain is forecast. c) An effort will be made to store only the amount of a potentially hazardous product necessary to complete the job. d) Materials, fuels, liquids and lubricants, and equipment supplies stored on site will be kept in a neat, orderly manner, in appropriate containers, with the original manufacturer's label, and, if possible, in an enclosure. e) Any hazardous materials will be stored and labeled according to local, state, and federal regulations. f) If drums must be stored without overhead cover, they will be stored at a slight angle to reduce corrosion and ponding of rainwater on the lids. g) Substances will not be mixed with one another unless recommended by the manufacturer. h) Manufacturer's recommendations for proper use and disposal of a product will be followed. i) Whenever possible, all of a product will be used before disposal of its container. j) If surplus product must be disposed of, the manufacturer's or the local and state recommended methods for proper disposal will be followed.	Hazards and Hazardous Materials, Hydrology and Water Quality	Primary Construction Contractor	CVRWQCB	Ongoing during construction	Implement all identified BMPs such that potential contaminants are isolated from waterways to the extent practicable and feasible

Measure	Applicable Resources	Responsible Entity	Relevant Agency	Measure Timing	Action
CM-5. The SWPPP developed for the Project will include, but not be limited to, the following measures to prevent, control, and minimize impacts from a spill of a hazardous, toxic, or petroleum substance during construction of the Project: a) Minor spills are those that can be controlled by on-site personnel. The following actions will occur upon discovery of a minor spill: ▪ The spread of the spill will be contained. ▪ If the spill occurs on impermeable surfaces, such as any temporary surfaces installed for pollution prevention during construction, it will be cleaned up using "dry" methods (e.g., absorbent materials, cat litter, rags). ▪ If the spill occurs in permeable substrate areas, it will be immediately contained by constructing an earthen dike. The contaminated soil will be excavated and properly disposed of. ▪ If the spill occurs during rain, the impacted area will be covered to avoid runoff, and appropriate cleanup steps will be taken after precipitation has ceased. ▪ All steps taken to report and contain the spill will be recorded. b) On-site personnel should not attempt to control major spills until the appropriate and qualified emergency response staff have arrived at the site. Failure to report major spills can result in significant fines and penalties. ▪ If a major spill occurs, the Governor's Office of Emergency Services Warning Center will be notified at (800) 852-7550 along with local authorities. ▪ For spills of federal reportable quantities, the National Response Center will also be notified at (800) 424-8802. The federal reportable spill quantity for petroleum products is any oil spill that: (1) violates applicable water quality standards, (2) causes a film or sheen upon or discoloration of a water surface or adjoining shoreline, or (3) causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines. ▪ A written report will be sent to all notified authorities. c) Diesel fuel, oil, gasoline, and lubricants are considered petroleum products. These materials will be handled carefully to minimize their exposure to storm water. The risks in using petroleum products will be reduced by following these steps: ▪ Waste oil and other petroleum products will not be discharged into the ground or other water bodies. ▪ Petroleum products will be stored in tightly sealed containers that are clearly labeled, in a covered area, and in an upland area or within prefabricated spill containment devices, earthen berms, or similar secondary containment features. ▪ On-site vehicles will be monitored daily for fluid leaks and receive regular preventative maintenance to reduce the chance of leakage (e.g., check for and fix fuel oil leaks in construction vehicles on a regular basis). Oil, grease, or other fluids will be washed off at designated wash stations prior to entering the Project Area. ▪ Bulk fuel or lubricating oil dispensers will have a valve that must be held open to allow the flow of fuel into construction vehicles. During fueling operations, the contractor will have personnel present to detect and contain spills. d) The following additional spill control and cleanup practices will be followed: ▪ Spills will be contained and cleaned up immediately after discovery. ▪ Manufacturer's methods for spill cleanup of a material will be followed as described on the material safety data sheets (kept with product containers). ▪ Materials and equipment needed for cleanup procedures will be kept readily available on site, either at an equipment storage facility or on the contractor's trucks. Equipment to be kept on site will include, but not be limited to, brooms, dust pans, shovels, granular absorbents, sand, sawdust, absorbent pads and booms, plastic and metal trash containers, gloves, and goggles. ▪ On-site personnel will be made aware of cleanup procedures, the location of spill cleanup equipment, and proper disposal procedures. ▪ Toxic, hazardous, or petroleum product spills required to be reported by regulations will be documented and a record of the spills will be kept with Project documents. If a spill occurs that is reportable to the federal, state, or local agencies, the contractor will be responsible for making and recording the reports.	Hazards and Hazardous Materials, Hydrology and Water Quality	Primary Construction Contractor	CVRWQCB	Ongoing during construction	Implement all identified BMPs such that potential contaminants are isolated from waterways to the extent practicable and feasible

Measure	Applicable Resources	Responsible Entity	Relevant Agency	Measure Timing	Action
CM-6. The following measures will be implemented to reduce the potential for fire: a) Smoking will be permitted only in designated smoking areas. b) Every fuel truck will carry a large fire extinguisher with a minimum rating of 40 B:C. c) All flammable materials will be removed from equipment parking and storage areas.	Air Quality, Hazards and Hazardous Materials, Wildfire	Primary Construction Contractor	Primary Construction Contractor	Ongoing during construction	Implement all identified BMPs such that potential for fire is reduced
CM-7. Construction activities associated with the Project may exceed the Solano County noise limit of 65 dBA at the nearest property line, as outlined in Solano County Code § 28.70.10; however, the neighboring property owners are the same entity that owns the Project Area and/or supportive of the Project. To reduce noise impacts to the nearby noise-sensitive receptors, work expected to exceed this threshold will be restricted to daytime hours (7:00 a.m. to 7:00 p.m.).	Noise	Primary Construction Contractor	Solano County	Ongoing during construction	Implement the identified BMP
Mitigation Measures					
MM-1. Tree removal will be mitigated at a 1:1 ratio for non-native species and a 2:1 ratio for native species by replanting on-site or off-site or purchasing credits from a relevant mitigation bank.	Aesthetics, Biological Resources	District ~~and Biological Contractor~~	CDFW	Ongoing during construction and post construction, if applicable	Document acreage of tree removal and implement mitigation
MM-2. Prior to construction, special-status plant surveys will be conducted throughout the Project Area in accordance with *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants* (USFWS 2000) and *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018). Areas with special-status plants will be flagged or otherwise marked (e.g., staked, fenced) for avoidance, including a 10-foot-radius buffer. If work must be conducted within the 10-foot buffer, hand tools will be utilized to the extent possible. A biological monitor will be present during construction activities in areas within a 10-foot buffer of special-status plants to ensure impacts are avoided.	Biological Resources	District ~~and Biological Contractor~~	CDFW	Prior to any site disturbance. If necessary, ongoing during construction and following assessment of affected plants	Pre-construction plant surveys. If necessary, ensure avoidance of special-status plants ~~or develop a Mitigation and Monitoring Plan to mitigate for any effects~~
MM-3. All contractors and equipment operators will be provided with Worker Environmental Awareness Program training about the environmental resources of the Project Area, including special-status plants, fish, and wildlife species with potential to occur within the Project Area, and required protection measures. Workers will be informed about the presence, life history, and habitat requirements of all special-status species that may be affected by Project activities. Training will also include information on state and federal laws protecting plants, wildlife, fish, nesting birds, cultural resources, and water quality and the consequences of noncompliance with these laws. This training will be conducted prior to construction activities or to any new staff/contractors added during the Project.	Biological Resources, Cultural Resources, Hydrology and Water Quality, Tribal Cultural Resources	District ~~and Biological Contractor~~	CDFW	Prior to construction for each year of Project implementation, and for any new staff or contractors added during Project	Conduct training with sign-in sheets for all construction crew members and equipment operators
MM-4. A preconstruction survey for northwestern pond turtles (*Actinemys marmorata*) and active breeding locations (i.e., nests), as relevant, will be conducted in suitable habitat within the Project footprint and surrounding 300 ft no earlier than 7 days prior to initiation of activities. If an active northwestern pond turtle nest (nesting season is typically May through July) is discovered, the area will be noted, and a no-disturbance buffer will be established and flagged. The recommended no-disturbance buffer is 100 ft; however, the buffer will be determined by the biologist (and if needed, in consultation with the California Department of Fish and Wildlife (CDFW) based on environmental conditions and activities being conducted nearby. No Project activities will occur within the no-disturbance buffer zone until the biologist has determined that the nest is no longer in use. If deemed appropriate by the biologist, exclusion fencing may be incorporated. If northwestern pond turtle is observed at any time during construction, it will be allowed to leave the area on its own or may be relocated by a biologist to a suitable habitat outside the Project footprint.	Biological Resources	District ~~and Biological Contractor~~	CDFW, USFWS	Prior to any site disturbance and ongoing during construction, if applicable	Pre-construction surveys for northwestern pond turtles and their nests. If necessary, ensure avoidance of active nests

Measure	Applicable Resources	Responsible Entity	Relevant Agency	Measure Timing	Action
MM-5. The following measures will be implemented to minimize potential impacts to giant garter snake or its habitat. These measures are based on the U.S. Fish and Wildlife Service's (USFWS's) *Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake Habitat, from Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Projects with Relatively Small Effects on the Giant Garter Snake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter and Yolo Counties, California* (USFWS 1997), as well as on recommendations from CDFW. a) Initial site preparation and initial ground-disturbing activities within 200 ft of suitable giant garter snake habitat will occur between May 1 and October 1; this is the active period for the snake, lessening the potential for direct mortality. Ground-disturbing work initiated prior to October 1 may continue into the snake's inactive season. b) No more than 30 days prior to ground-disturbing activities, a biologist with giant garter snake experience will survey the work area and a minimum 50-ft radius (of the work area) for the snake or burrows and crevices in which giant garter snake could be present. Potentially suitable burrows and crevices will be flagged and avoided by establishing a minimum 50-ft no-disturbance buffer. c) If a giant garter snake is discovered at any time within the Project Area, including staging locations, all Project activities will halt until USFWS and CDFW have been notified and given the opportunity to provide additional giant garter snake protection measures. d) The use of erosion control materials potentially harmful to giant garter snake, such as mono-filament netting, will be prohibited; alternatively, tightly woven fiber netting or similar material will be used to ensure that giant garter snakes do not get trapped or become entangled.	Biological Resources	District ~~and Biological Contractor~~	CDFW, USFWS	Prior to any site disturbance and ongoing during construction	Giant garter snake pre-construction surveys and avoidance measures (e.g., work window, flagging suitable burrows) conducted in accordance with mitigation requirements
MM-6. A biologist will conduct a habitat assessment for special-status bats or signs of their presence (e.g., guano, urine staining) within the Project Area prior to any tree or structure removal to identify areas of suitable bat habitat (e.g., cracks or crevices in structures; large cavities, basal hollows, or crevices in trees; exfoliating tree bark or deep bark fissures). If suitable habitat is identified, a biologist may perform emergence or acoustic surveys. The following measures will be implemented if active bat roosts are identified or emergence or acoustic surveys are not performed (in which case presence will be assumed). These measures do not apply if emergence or acoustic surveys determine suitable habitat is not occupied: a) Tree or structure removal will occur between August 16 and October 31. This time frame avoids the approximate periods of maternal roosting (April 15 to August 15) and winter torpor (October 31 to March 31). b) Trees will be disturbed only when it is not raining or no rain is forecast to occur for 3 days and when daytime temperatures are at least 50 degrees Fahrenheit. c) Suitable or occupied trees will be removed in a step-wise process; initially larger limbs will be removed and then work will cease. After at least one overnight period, trunks will be felled, gently lowered to the ground, and left undisturbed for at least one overnight period before removal. d) Structures containing or suspected to contain roost sites will be removed under the supervision of a biologist.	Biological Resources	District ~~and Biological Contractor~~	CDFW	Prior to any site disturbance and ongoing during construction, if applicable	Implement all identified BMPs such that potential impacts on special-status bats are avoided or minimized
MM-7. The following measures will be implemented for Project activities conducted between March 1 and August 15 to minimize impacts to Swainson's hawk (Buteo swainsoni): a) Survey timing and methodologies will aim to follow the Swainson's Hawk Technical Advisory Committee's (2000) *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* and will occur within 0.25 mile of the Project Area up to construction start date. b) As much as feasible, surveys will aim to be conducted during Period II, the early months of the nesting season (March 20 to April 5), to maximize the likelihood of detecting an active nest (Swainson's Hawk Technical Advisory Committee 2000). c) If active nests are found, a biologist will establish a 0.25 mile no-disturbance buffer in consideration of surrounding waterways. If Project-related activities need to occur within the no-disturbance buffer, a biological monitor experienced with raptor behavior will monitor the nest during work. The biological monitor will have the authority to stop work if nesting hawks are exhibiting agitated behavior. If the birds are tolerant of Project activities, consultation with CDFW will commence for the reduction of the no-disturbance buffer.	Biological Resources	District ~~and Biological Contractor~~	CDFW	Prior to any site disturbance and ongoing during construction, if applicable	Pre-construction surveys for nesting Swainson's hawk. If necessary, buffer and monitor active nests
MM-8. To the extent practicable, construction will take place outside the typical avian nesting season (February 15 to August 15). If construction is conducted during the nesting season, a biologist will conduct a focused preconstruction nesting bird survey within the Project Area no more than 1 week prior to the initiation of Project activities. The survey will be conducted in all potential nesting habitat located within the Project Area and within a 250-ft buffer and 1,000-ft buffer for passerines and raptors (e.g., *Buteo* spp.), respectively. If construction activities lapse for 7 days or more during the nesting season, a biologist will conduct an additional nesting bird survey in areas of potential habitat before Project activities are reinitiated. If an active nest is identified, a no-disturbance buffer will be established using flagging, fencing, and/or signage as appropriate. No construction activities will occur within the buffer zone until a biologist has determined that the young have fledged or that construction activities within the buffer zone are not disturbing the birds. The width of the buffer zone and whether activities are permitted within it will be determined by a biologist in consultation with CDFW.	Biological Resources	District ~~and Biological Contractor~~	CDFW	Prior to any site disturbance and ongoing during construction, if applicable	Pre-construction nesting bird surveys. If necessary, buffers and monitoring in accordance with mitigation requirements

Measure	Applicable Resources	Responsible Entity	Relevant Agency	Measure Timing	Action
MM-9. Western burrowing owl (*Athene cunicularia hypugaea*) could occur in or near the work area. No more than 14 days prior to the start of construction, a biologist will conduct a preconstruction survey for active burrowing owl burrows using methods recommended in CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). Occupied habitat includes areas burrowing owls may use for breeding (February 1 to August 31), wintering (September 1 to January 31), foraging, and migration stopovers. Occupancy of suitable burrowing owl habitat can typically be verified by an observation of at least one burrowing owl or, alternatively, its molted feathers, cast pellets, prey remains, eggshell fragments, excrement, or loose soil near the burrow entrance. If burrowing owl presence is demonstrated, an appropriate buffer of up to 1,600 ft (as recommended in the *Staff Report on Burrowing Owl Mitigation*) will be established by a biologist in consideration of surrounding waterways. Project-related activities necessary within the buffer will be monitored by a biologist to ensure that Project construction does not detrimentally impact the owls. The on-site biologist will have the authority to stop work if the owls are exhibiting agitated behavior.	Biological Resources	District ~~and Biological Contractor~~	CDFW	Prior to any site disturbance and ongoing during construction, if applicable	Pre-construction burrowing owl surveys. If necessary, buffers and monitoring in accordance with mitigation requirements
MM-10. In the event of an inadvertent discovery of cultural resources, Project activity will immediately cease within 25 ft of the discovery. Project work may continue at other locations while the discovery is examined. The potential significance of the discovery will be determined by a qualified archaeologist as defined in 36 Code of Federal Regulations (CFR) § 61. If it is determined that the discovery is not significant, no further investigations are necessary, and Project activities may resume. If the discovery is determined to be significant, additional investigations, such as data recovery, may be necessary before resuming Project activities at the site of the discovery. Any additional archaeological investigations will be designed and conducted in consultation with the relevant agencies, a qualified archaeologist, and the appropriate Native American Tribes. Regardless of the significance of an inadvertent discovery, all inadvertent discoveries of cultural resources must be appropriately documented and reburied on the project site in a location where the cultural resources will not be disturbed in the future.	Cultural Resources, Tribal Cultural Resources	District ~~and Biological Contractor~~	NAHC, SHPO, USACE	Ongoing during construction	If there are finds of undocumented cultural resources, report and protect the finds until evaluated by appropriate individuals
MM-11. In the event of an inadvertent discovery of human remains, the provisions of the California Health and Safety Code Section 7050.5, California Public Resources Code Section 5097.98, and Assembly Bill 2641 will be implemented. In addition, all work within 25 ft of the discovery will immediately cease until the discovery can be evaluated by the County Coroner. Project work may continue at other locations while the discovery is examined. If the remains are determined to be Native American, the County Coroner must contact the Native American Heritage Commission (NAHC) who will identify a Most Likely Descendant (MLD) for the remains. The MLD will make recommendations for the recovery, treatment, and disposition of any Native American remains. Final disposition of any inadvertently discovered human remains will be decided in consultation with the MLD and the District.	Cultural Resources, Tribal Cultural Resources	District ~~and Biological Contractor~~	NAHC, SHPO, USACE	Ongoing during construction	If there are finds of undocumented human remains, report and protect the finds until evaluated by appropriate individuals

3 REFERENCES

CDFW (California Department of Fish and Wildlife). 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency, Department of Fish and Game. March 7, 2012.

CDFW. 2018. Protocols for surveying and evaluating impacts to special status native plant populations and sensitive natural communities. California Natural Resources Agency, Sacramento, California. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline.

Stillwater Sciences and MBK Engineers. 2025. Initial Study/Mitigated Negative Declaration for the Lindsey Slough Levee Rehabilitation Project Unit 1. Final. Prepared by Stillwater Sciences, Davis, California, and MBK Engineers, Sacramento, California, for Reclamation District No. 536, Stockton, California.

Swainson's Hawk Technical Advisory Committee. 2000. Swainson's Hawk Technical Advisory Committee's Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. Available at https://www.wildlife.ca.gov/Conservation/Survey-Protocols#377281284-birds.

USFWS (U.S. Fish and Wildlife Service). 1997. Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Projects with Relatively Small Effects on the Giant Garter Snake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter and Yolo Counties, California.

USFWS. 2000. Guidelines for conducting and reporting botanical inventories for federally listed, proposed and candidate plants.