INITIAL STUDY AND ENVIRONMENTAL ASSESSMENT

UPPER MORMON SLOUGH EROSION REPAIR PROJECT

December, 2020

PREPARED FOR:

San Joaquin County Flood Control and
Water Conservation District
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ACRONYMS

ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effect
BA	Biological Assessment
BMP	Best Management Practices
BRA	Biological Resource Assessment
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGC	California Government Code
CGP	Construction General Permit
CH4	Free methane
CHRIS	California Historic Resources Information System
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CNPSEI	California Native Plant Society Endangered Inventory
CO2	Carbon dioxide
County	Local Government; San Joaquin County
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
CY	Cubic Yards
dB	Decibel
dBA	A-Weighted Decibel
dBA/DD	Doubling of Distance
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources

EA	Environmental Assessment
EIR/EIS	Environmental Impact Report/Environmental Impact Statement
EPCRA	Emergency Planning and Community Right-to-Know Act
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
FONSI	Finding of No Significant Impact
FSRP	Flood System Repair Project
GHG	Greenhouse Gas
HCP	San Joaquin County Multi-Species Habitat Conservation and Open Space Plan
IPaC	Information for Planning and Consultation
IS	Initial Study
L_{dn}	Day-Night Noise Level
L_{eq}	Equivalent Noise Level
LMA	Local Maintaining Agency
L_{max}	Maximum Noise Level
LOS	Level of Service
MBTA	Federal Migratory Bird Treaty Act
MM	Mitigation Measure
MUTCD	Manual on Uniform Traffic Control Devices
N2O	Nitrous oxide
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NPPA	Native Plant Protection Act
NWPs	Nationwide Permits
OHWM	Ordinary High Water Mark
PM2.5	Particulate Matter, 2.5 micron
RQs	Reportable Quantities
RSP	Rock Slope Protection

SEL	Single Event Noise Level
SEWD	Stockton East Water District
SJVAPCD	San Joaquin Valley Air Pollution Control District
SWPPP	Storm Water Pollution Prevention Plan
TMDL	Total Maximum Daily Load
TQs	Threshold Quantities
U.S.	United States
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey
VELB	Valley Elderberry Longhorn Beetle
WDRs	Waste Discharge Requirements
WEAP	Worker Environmental Awareness Program
WSEL	Water Surface Elevation

1.0 INTRODUCTION

1.1 Introduction and Regulatory Guidance

The San Joaquin County Flood Control and Water Conservation District (FCWCD) has prepared this joint Initial Study (IS)/Environmental Assessment (EA) to evaluate the potential environmental effects of implementing the Upper Mormon Slough Erosion Repair Project (the Proposed Project) per the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) and related regulations implementing NEPA (40 Code of Federal Regulations [CFR] 1500–1508). The FCWCD maintains more than 100 miles of "project" channels and levees, mostly in the northeastern portion of the County, in accordance with agreements with the United States Army Corps of Engineers (USACE) and the California Department of Water Resources (DWR). "Project" levees and channels are part of a State or Federal flood control project and are maintained in accordance with DWR and USACE mandates.

This document is a joint Initial Study/Environmental Assessment/Initial Study (IS/EA) and is intended to satisfy the requirements of CEQA and NEPA for evaluating environmental effects and identifying appropriate mitigation measures for any significant impacts. By preparing a single document that complies with CEQA and NEPA requirements, the involved agencies avoid unnecessary duplication. While similar, CEQA and NEPA are not identical; where they differ, the more stringent of the regulations are followed.

NEPA compliance is required because USACE has jurisdiction over and is responsible for certification of Federal levees. Under its Section 408 application process (33 USC 408) USACE reviews requests to significantly modify a locally-or Federally maintained USACE flood protection project. Originally enacted as part of the Rivers and Harbors Act of 1899, 33 USC 408 requires the Secretary of the Army to review and possibly approve the proposed modification. While the Proposed Project design is consistent with the Operations and Maintenance (O&M) manual for the project levee, and specifically avoids making significant modifications to it, USACE will still review conformity with Section 408 as a part of its oversight process.

The analysis in this document concentrates on aspects of the project that are likely to create a significant effect on the environment, and identified measures incorporated into the project description to avoid, eliminate, reduce, or compensate for these impacts. For instance, as designed, the project will participate in the San Joaquin Multi-Species Habitat Conservation and Open Space Plan (SJHCP) to fully mitigate any potential impacts to state or federally listed terrestrial species and their habitat.

CEQA Guidelines define "significant effect on the environment" as a "substantial or potentially substantial adverse change in any of the physical conditions within the area affected by the project...." (CEQA Guidelines, Section 15382). NEPA requires that significance be determined based on the context and intensity of the effect (40 C.F.R 1502.16). This IS/EA will be circulated for a 30-day public and agency review, as required by CEQA and NEPA.

1.2 Lead Agency

San Joaquin County FCWCD is the lead agency for ensuring compliance with CEQA for the Proposed Project. It is also the Local Maintaining Agency (LMA) for the Mormon Slough levees and related structures. USACE is the lead agency under NEPA.

1.3 Purpose and Document Organization

The primary purpose of this IS/EA is to determine whether the proposed Project would have a significant impact on the environment, and therefore require the preparation of an Environmental Impact Report/Environmental Impact Statement (EIR/EIS). If the findings of this study show that potential impacts can be mitigated through features incorporated into the project design and construction, then a Mitigated Negative Declaration and Finding of No Significant Impact (FONSI) may be utilized. USACE could also determine that the project is categorically exempt from NEPA. This IS/EA includes this introductory section discussing the legal and regulatory requirements involved in reviewing the Proposed Project, and is followed by a detailed project description, a discussion of possible alternatives to the Proposed Project, and analysis of potential impacts to human health or the environment that may be caused by construction or operation of the Proposed Project.

2.0 PROJECT DESCRIPTION

2.1 Proposed Action

The Proposed Project would consist of repairs to the north and south banks of a segment of Upper Mormon Slough in San Joaquin County, California (Table 1). Mormon Slough accepts flow from the Calaveras River at Bellota and carries it to the Stockton Diverting Canal, which returns the flow to the Calaveras River. The Calaveras River eventually flows into the San Joaquin River.

The actions would include minor excavation for access and to remove compromised material in the channel, immediately followed by repair of the channel slope with a variety of materials including soil-filled rock slope protection (RSP), a coarse filter bed, earth fill, and launch rock. Launch rock is placed on the toe of the repair, and is intended to sacrificially "launch" itself downslope to fill in any material that may have been removed by high flows.

This project is being completed by the San Joaquin County FCWCD with funding and support from DWR's Division of Flood Management under its Flood System Repair Project (FSRP). As such, the repairs will be designed in accordance with DWR's Rural Levee Repair Guidelines (California Department of Water Resources, 2014), and as outlined in section 2.6.1.

2.2 Project Location

The Proposed Project area is in the eastern portion of San Joaquin County, approximately four miles east/northeast of the town of Linden, and 15 miles east/northeast of the City of Stockton. The slough runs parallel to State Route 26 in the Proposed Project area, as shown in Figure 1. The repair area extends downstream from the Escalon-Bellota Bridge to a small regulating dam on the slough (Table 1, Table 2).

2.3 Existing Conditions and Need for Project

The purpose of the proposed project is to stabilize the channel alignment and preserve the general uniformity of the bank lines in order to preserve the function of the channel and to reduce the potential for further lateral migration of the channel. The channel is eroding toward State Route 26 on its northern bank, and toward neighboring structures and orchards on its southern bank. Field observations show that erosion and undermining

of the existing slopes is leading to incremental collapse and/or oversteepening of the slopes, which is considered the most prevalent mode of failure of the system to be addressed by the repair design.

Table 1: Upper Mormon Slough Estimated Repairs Characteristics – North Bank

Repair Characteristics	
Repair Length	3,290 linear feet
Area of laydown	15.2 acres
Area of repair below Ordinary High Water Mark (OHWM)	2.06 acres
Area of repair above OHWM	0.35 acres
Estimated excavation, above OWHM	5,000 cubic yards
Estimated excavation, below OWHM	1,500 cubic yards
Earthfill, above OWHM	425 cubic yards
Aggregate base, above OHWM	310 tons
Agricultural soil, above OHWM	1,300 cubic yards
Rockfill, above OHWM	7,200 cubic yards
Launch Rock, above OHWM	0 cubic yards
Launch Rock, below OHWM	8,800 cubic yards
Estimated Truck Loads	1,500
Final bank slope (Horizontal:Vertical)	Varies (1.5:1 - 4:1)

Table 2: Upper Mormon Slough Estimated Repair Characteristics – South Bank

Repair Characteristics	
Repair Length	1,425 linear feet
Area of laydown	5.1 acres
Area of repair below Ordinary High Water Mark (OHWM)	0.85 acres
Area of repair above OHWM	0.20 acres
Area of repair below OHWM	0.85 acres
Estimated excavation, above OWHM	1,500 cubic yards
Earthfill, above OWHM	425 cubic yards
Aggregate base, above OHWM	230 tons
Agricultural soil, above OHWM	600 cubic yards
Rockfill, above OHWM	3,250 cubic yards
Launch Rock, above OHWM	0 cubic yards
Launch Rock, below OHWM	4,050 cubic yards

Repair Characteristics	
Estimated Truck Loads	700
Final bank slope (Horizontal:Vertical)	Varies (1.5:1 - 4:1)

2.4 Adjacent Land Uses

The Proposed Project area is bounded on its north side by Highway 26, and an agricultural access road on its south side controlled by San Joaquin County Flood Control and Water Conservation District (District). Land use in the area is predominantly agricultural, typified by large orchards surrounding the proposed project area, with State Route 26 running parallel to its north bank. The eastern end of the Proposed Project area is the Escalon-Bellota Bridge, which is approximately 1,400 feet downstream of the confluence of the Calaveras River and Mormon Slough, where water flows from the River into the Slough through a spill gate.

2.5 Description of the Proposed Project

The Upper Mormon Slough Levee Repair project would involve installation of materials at the base of the levee slopes along a section on the north and south sides of the identified segment of the Slough. Work would be conducted from June, 2021 to December, 2021, with in-water portions being complete by October 31, 2021.

The repairs would consist primarily of installing Rock Slope Protection (RSP), which generally consists of rip-rap of varying size, soil, gravel and a textile fabric above the ordinary high water mark to prevent downward migration of the soil. To promote growth of vegetation, the RSP voids would be filled with agricultural soil and seeded with grasses (i.e., soil filled RSP). Vegetation removal prior to placement of RSP would generally be limited to removal of loose surface debris from past slope failures, minor grading to produce relatively smooth surfaces to prepare for RSP, or to key the repairs into the existing slopes.

After grading, workers would install a geotextile break that will seal cracks or openings in the base soil. A base of launch rock would be installed at the lower edge of the filter, and RSP would be laid over the filter bed. The (preliminary) and riprap size recommendations differ throughout the channel and include class II, III, and IV with a gravel filter and launchable toe.

2.6 Proposed Action

This section describes the proposed action. This includes the discussion of features, construction equipment, staging areas, disposal of excess materials, construction schedule, and long-term maintenance of the project.

2.6.1 Features

Review of the O&M Manual for the Mormon Slough Project (United States Army Corps of Engineers (USACE), 2010) indicates that the Upper Mormon Slough is a project "Channel." Maintenance of channels is defined in the O&M Manual section 4-03 as follows:

4-03.c.(3):

"Dumped rock or other suitable types of protection should be placed at locations found by experience to be critical trouble points, ***with a view to stabilizing the channel alignment and preserving the general uniformity of the bank lines***." (emphasis added)

4-03.c.(4):

"Sediment and debris plugs or other obstructions should be removed from the channel to prevent any tendency for the flows to be deflected within the channel. The heavy material likely to accumulate in the new channel at the mouths of tributaries should be removed to keep the channel clear."

4-03.c.(5):

"The channel and right-of-way shall be kept reasonably clear of debris, refuse matter, or industrial wastes in accordance with criteria of the California State Water Control Boards."

4-03.c.(6):

"Weeds and other vegetal growth in the channel shall be cut in advance of flood season and together with all debris, removed from the channel."

4-03.e.(1)(c)

"In the event an inspection reveals that due to scour, settlement, or other causes, stone protection on the levee or bank is required beyond the limits of the original construction or in reaches of the levee or bank not originally provided with such protection, ***local interests will provide additional sloping of the bank and placement of stone protection as needed to protect completed work***. The work shall be done in a manner acceptable under ***standard engineering practice***." (emphasis added)

The maintenance activities are thus planned to comply with 4-03.c(3) and 4-03.e(1)(c) of the O&M Manual in that rock slope protection (stone protection) will be placed as needed to protect the existing channel following standard engineering practice. For this project, standard engineering practice was interpreted to be the practices and design guidelines outlined by the California Department of Water Resources (DWR) Rural Levee Repair Guidelines (RLRG) dated March 2014, specifically Section 3.3.1.

Stabilizing the Upper Mormon Slough channel alignment and preventing further bank erosion will greatly reduce further erosion and sedimentation. State Route 26 will be protected from eventual erosion damage, as will orchards on the south bank, which have already experienced loss of productive land due to erosion.

Mature trees and vegetation on the banks of Upper Mormon Slough are threatened with loss due to erosion. Some of the vegetation close to the current water's edge will need to be removed to accommodate the RSP and launch rock. However, participation in the HCP will result in 3:1 mitigation of riparian impacts.

2.6.2 Required Approvals

A list of permits and/or approvals that the Proposed Project would require is attached as Table 3.

Table 3: Required Permits and Approvals

Permit	Permitting Authority	Affected Elements
Federal Permits / Approvals		

Permit	Permitting Authority	Affected Elements
National Environmental Policy Act (NEPA) Compliance	United States Army Corps of Engineers	All
Clean Water Act Section 404 Dredge and Fill Permit	United States Army Corps of Engineers	Permitted activities that require dredging or the placement of fill within Waters of the United States
Federal Endangered Species Act compliance	United States Fish and Wildlife Service	Permitted activity affecting federally listed special-status species
Federal Endangered Species Act compliance	National Marine Fisheries Service	Permitted activity affecting federally listed special-status marine or anadromous fish species
State Permits/Approvals		
Section 1602 et seq. Streambed Alteration Agreement	California Department of Fish and Wildlife	Permitted activity affecting State-listed special-status species
Encroachment Permit	Central Valley Flood Protection Board	Mormon Slough channel, banks, and levees.
Clean Water Act Section 401 Water Quality Certification	Central Valley Regional Water Quality Control Board	Permitted activities within jurisdictional waters of the U.S. requiring a Section 404 permit
National Historic Preservation Act Section 106 Compliance	State Historic Preservation Office	Permitted activity on facilities that would affect cultural and historic resources listed or eligible for inclusion in the National Register of Historic places
California Environmental Quality Act (CEQA): Negative Declaration or Mitigated Negative Declaration	San Joaquin County	All

2.6.3 Construction Details

Access and Staging

Access to the work area on the north side of the Slough and the staging area would be from three locations along Highway 26 (Figure 2). Access to the work area on the south side of the Slough would be from Escalon-Bellota Road, either along the service road (which doubles as an agriculture access road in this area located at the Escalon-Bellota Bridge), or from a farm driveway located 1,100 feet south of the Bridge. Compromised material would be loaded into dump trucks and disposed off-site or reused soil-filled RSP/backfill. The launch rock and other fill materials would be obtained from local quarries.

Construction Sequencing and Equipment

The repair work would be accomplished using excavators or similar equipment. Work would begin by developing access to the site through use of ramps or gated access roads by clearing vegetation or other obstructions to allow access. Following development of access, an excavator located above the waterway would place launch rock and soil filled rock slope protection within the channel. Any ramps or access routes would be restored following completion of construction with any excess compromised material either used in restoration activities or removed from the site. Once the repairs are deemed satisfactory, as approved by San Joaquin County, equipment would be removed, and vegetation replanted as appropriate.

Construction Equipment

- Pickup Trucks
- Hand and Walk Behind Compactors
- Ride-on Compactors (Rollers)
- Dozers
- Backhoes or Excavators
- Pavers
- Semi-trucks with transfer trailers
- Loaders
- Haul (Dump) Trucks
- Hydroseeding Equipment
- Chippers
- ATV's
- Skidders
- Crane

Vegetation Removal and Fill

The channel bank will be graded after vegetation removal to create space to place RSP in designated areas. Vegetation debris that is removed will be stockpiled in the staging area outside the slough. Some areas of the channel that are significantly eroded will require additional fill to establish an appropriate cross section. Figures 3-6 show existing vegetation and site conditions in the project area.

Restoration and Cleanup

Upon completion of construction activity, all equipment and excess materials would be transported off site using the same routes used for mobilization and construction. Levee slopes and the soil-filled RSP would be seeded to promote re-vegetation and minimize soil erosion. The staging area would then be cleaned of any rubbish and all parts of the work area would be left in its original condition.

Operation and Maintenance

The County will be responsible for the operation and maintenance of the repaired channel. Regular maintenance activities could include rodent control, vegetation clearance, inspections, and other maintenance activities as required by the O&M manual.

2.6.4 Utilities

Electrical overhead power lines cross the Mormon Slough on the east side of the bridge. These overhead power lines (Pacific Gas and Electric [PG&E]) are located high enough on the existing power poles that they will not be in conflict with construction equipment. There are also existing underground communication lines on both sides of SR-26, on the east side of Escalon-Bellota Road, and along the north side of East Shelton Road. Two farming irrigation intake pipes are located within the channel and run perpendicular to the channel. At this time, the irrigation intake pipes are not in conflict with the Proposed Project although they need to be protected in place and accommodated within the rocked slope.

Figure 1: Project Vicinity

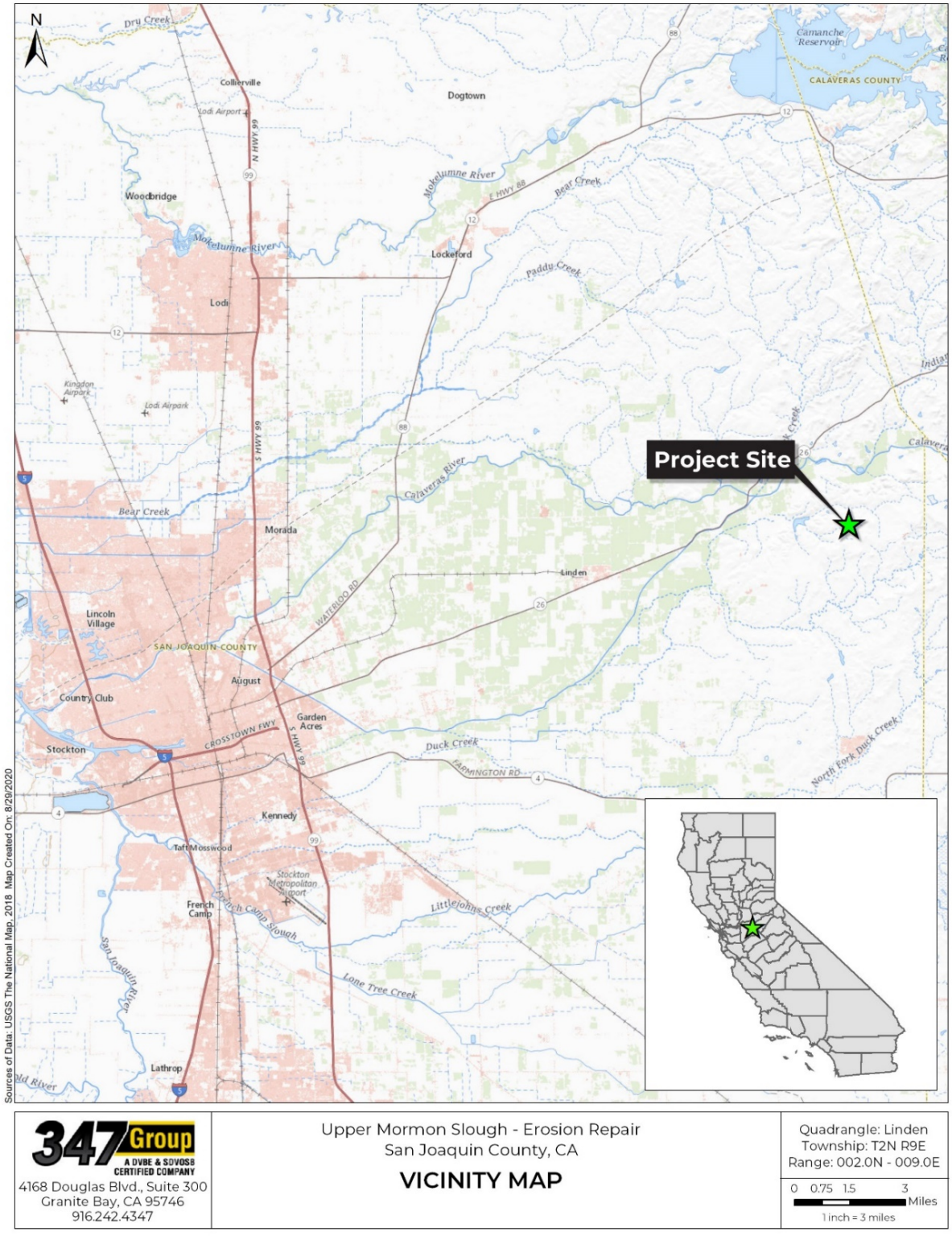
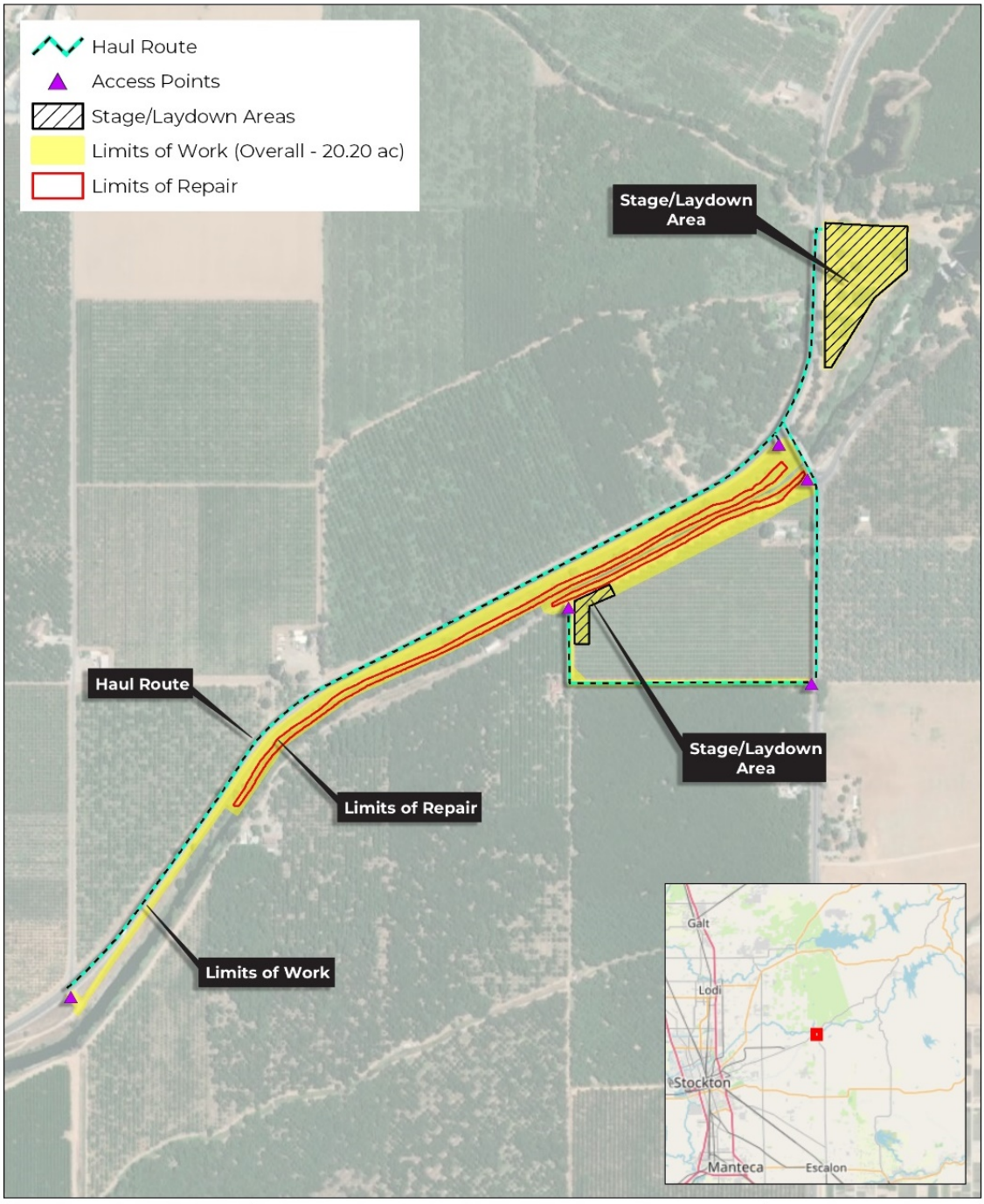


Figure 2: Limits of Disturbance



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Upper Mormon Slough - Erosion Repair
San Joaquin County, CA

LIMITS OF DISTURBANCE

Sources of Data: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, GIS User Community, and Kleinfelder Map Created On: 9/5/2020

USGS 7.5-Minute Series - Linden Quadrangle;
T. 2N, R. 9E,
Sections 5, 6, and 7
25-acre study area

N

0 200 400 800 Feet
1:9,600

Figure 3: Downstream from Escalon-Bellota Bridge

Figure 4: Upstream from Escalon-Bellota Bridge

Figure 5: Aerial View of Mormon Slough

Figure 6: Mormon Slough Below Escalon-Bellota Bridge

2.7 Alternatives

2.7.1 Alternatives Eliminated from Further Consideration

Dewatering

Dewatering of the repair area was considered. However, this method offers minimal benefits in terms of construction access, and would remove an otherwise perennial water source from the riparian habitat. Additionally, Upper Mormon Slough conveys irrigation water released by Stockton East Water District at the Bellota weir to downstream of and within project limits.

2.7.2 No-Action Alternative

Under the no-action alternative, no action would be taken to halt erosion to protect the Upper Mormon Slough. Forces of erosion would persist, including wave wash, flood flows, and human disturbances. Undermining of private property along the south (left bank) and encroachment near Highway 26 and the existing levee on the north (right bank) would persist. Mature vegetation would continue to be lost due to bank erosion, increased turbidity, and decomposition downstream of high erosion.

Should encroachment continue from the No Action Alternative, resultant emergency measures would likely be of a nature that limits the ability to properly implement best management practices (BMP), site- specific mitigation, participation in the HCP, and other measures that would minimize impacts to surrounding communities.

3.0 ENVIRONMENTAL CHECKLIST

This chapter describes the potential effects on resources in the Proposed Project area, as well as the potential effects of the alternatives on those resources. Effects can be either positive or negative and may include direct or indirect effects. Each section contains a discussion of methods used to analyze effects and identifies any significant adverse effects. When needed, mitigation measures are proposed to avoid, minimize or mitigate significant effects for each resource.

The following terminology is used to describe the levels of significance for impacts identified for each resource area discussed in Chapter 3.

- A conclusion of ***no impact*** is used when it is determined that the proposed project would have no impact on the resource area under evaluation.
- A conclusion of ***less than significant impact*** is used when it is determined that the proposed project's adverse impacts to a resource area would not exceed established thresholds of significance.
- A conclusion of ***less than significant impact with mitigation*** is used when it is determined that mitigation measures incorporated into the project description and construction specifications would be required to reduce the proposed project's adverse impacts below established thresholds of significance.
- A conclusion of ***potentially significant impact*** is used when it is determined that the proposed project's adverse impacts to a resource area potentially cannot be mitigated to a level that is less than significant.

3.1 Resources Eliminated From Detailed Analysis

The Proposed Project consists of the repair of existing levees and are not expected to impact any of the following areas; Land Use and Planning, Mineral Resources, Population and Housing, Public Services, Recreation, Utilities and Service Systems, Wildfire, therefore, these resources are eliminated from detailed analysis.

3.1.1 Land Use

Land Use analysis considers the potential impacts on the surrounding community and looks at any potential conflicts with established land use plans and policies. The analysis is based on review of local plans and policies and site visits.

Typical uses in the Proposed Project area include orchard crop production, feed and grain storage and sales, crop spraying, and animal raising and sales. The Proposed Project area is on public property owned by the Stockton East Water District (SEWD). Private property surrounding the Proposed Project site is used for agriculture. Land use immediately surrounding the Proposed Project area is characterized by rural residential and agricultural uses. The California State Lands Commission confirmed that the subject land was acquired and patented/sold within the 500,000-acre grant; therefore, the proposed project will not require a lease from State Lands Commission.

Environmental Effects

Construction activities would not divide an established community because no community exists on site. The nearest developed residential community is approximately three miles away from the Proposed Project site. The Proposed Project would not result in any permanent acquisitions or easements, and thus the Proposed Project would not physically divide an established community. Land uses in the area would stay the same as they were before construction. The Proposed Project therefore, would have no impact on the overall existing land use and planning issues and therefore a detailed land use analysis for the Proposed Project is not warranted.

3.1.2 Mineral Resources

The proposed project is located in an agricultural setting. There are no known mineral resources of value within the proposed project area, and the proposed project would not result in the loss of important mineral resources. Furthermore, no mining occurs within this area. Therefore, there will be no impact to mineral resources and a detailed analysis is not warranted.

3.1.3 Population and Housing

Population and housing are not expected to change as a result of the proposed project. No direct or indirect population growth is expected to be induced by the proposed project. The proposed project will not involve construction of new housing or businesses, nor will it add to roads or other infrastructure. Furthermore, the proposed project will not displace any existing housing or people, nor would it disrupt or divide an established community. Therefore, the proposed project would not have an impact on population or housing and a detailed analysis on the subject in not warranted. Furthermore, construction activities would not have impacts for Highway 26, Escalon-Bellota Rd., or other nearby roads.

3.1.4 Public Services

The existing public services: police protection, fire protection, schools, parks or other public facilities, will remain unchanged as a result of the proposed project. The proposed project does not include proposals for new housing. Therefore, the proposed project would not generate students or increase demands for school services or facilities.

Emergency response services would remain unchanged during project construction and operation. The proposed project would use existing public services and no additional services or changes to existing services would be required. Therefore, the proposed project would have no effect on public services. As a result, a detailed public services analysis for the proposed project is not warranted.

3.1.5 Recreation

There are no federal, state, regional, or other parks within or in the vicinity of the Proposed Project. The proposed project would not result in the construction of any new facilities or a population increase; therefore, there would be no increased use of parks or recreational facilities over that which currently occurs. In addition, there would be no recreational facility expansion or construction as a result of the proposed project. There would be no recreation impacts.

3.1.6 Utility and Service Systems

Utilities and service systems are not expected to change as a result of the proposed project. It would not involve the construction of any facilities that would generate new sources of wastewater, nor generate additional storm water runoff, requiring the need for new stormwater drainage facilities.

Any storm related site water runoff caused from construction will be addressed by the contractor who will prepare a Storm Water Pollution Prevention Plan (SWPPP). Therefore, the Project would not result in the construction or expansion of wastewater treatment facilities or stormwater drainage facilities. The proposed project is not expected to affect public utilities and a detailed public utility analysis for the Project is not warranted.

3.1.7 Wildfire

The proposed project area is located within a local responsibility area classified as a moderate fire hazard severity zone (California Department of Forestry and Fire Protection, 2019). The proposed bank stabilization and repair would not impair an adopted response plan or emergency evacuation plan, exacerbate wildfire risk, or expose people or structures to significant risk of downstream flooding or landslides. There would be no impacts to wildfire risk.

3.2 Aesthetics

The aesthetic value of an area is a measure of the character and quality of the visual resource, combined with viewer response to these conditions. Aesthetic value is subjectively determined and based upon an individual's experience with the environment, the extent and nature of the change, the proximity of the individual to the site, and the duration of the views. An impact to aesthetic resources occurs when there are changes in viewer response as a result of Proposed Project construction or operation.

The value of aesthetic resources is generally based on the scenic attractiveness and integrity, landscape visibility, and regional concern levels. Scenic attractiveness is a measure of the landscape's uniqueness including landform, vegetation patterns, water characteristics, and cultural features. Landscape visibility is determined relative to the importance and sensitivity of the area, as determined through consideration of travel ways, use areas, and the regional and national importance of the location, and the use of the site.

Scenic resources can include natural open spaces, topographic formations, and built environments. For the purposes of defining these resources, the concepts of viewshed and sensitive receptor are often employed. "Viewsheds" constitute the range of vision in which scenic resources may be observed. Viewsheds are defined by

the physical features that frame the boundaries or context to one or more scenic resources. In the context of visual resources, "sensitive receptors" are defined as individuals that are especially sensitive to changes in aesthetic qualities, which could include changes in lighting, shadows, or surrounding visual character.

Table 4: Aesthetics CEQA Checklist

CEQA Checklist: Aesthetics	Potentially Significant Impact	Less-than-significant Impact with Mitigation Incorporated	Less-than-significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c. In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

3.2.1 Environmental Setting

The Upper Mormon Slough Channel is located in a rural portion of San Joaquin County along Highway 26, in an area designated by San Joaquin County as a local scenic route; however, no scenic stopping points are located at or along the Proposed Project site. Farmlands and orchards surround the slough and lush woodland and riparian vegetation consisting mostly of oaks and willow extend around it, occasionally exposing steep eroding slopes. The slough exhibits severe erosion on both the south and north banks.

The sensitive viewer group would include travelers such as passing motorists, and adjacent residents. These viewer groups have only limited views to the channel because it is densely vegetated and views from the East Highway 26 are limited mostly to the tree canopy. Views from the Escalon-Ballota Bridge provide a more detailed view onto the slough channel; however, for passing motorists, this view is limited to a few seconds' duration.

3.2.2 Environmental Effects

No Action Alternative

Under this alternative, no action would be taken to erosion. Aesthetics of the site would remain unchanged for the immediate future. Undermining of private property along the south (left bank) and encroachment near Highway 26 and the existing levee on the north (right bank) would persist. Long-term erosion would be expected to degrade the visual quality of the project area due to loss of mature riparian vegetation, bank sloughing, and sedimentation of the slough channel.

Proposed Project

The proposed project would require removal of mostly ruderal vegetation and disturbance of site soils. Construction equipment including excavators, graders, and haul trucks would be visible during construction. Construction activities would be conducted during daylight hours; therefore, construction would not require artificial lighting. The presence of construction equipment would degrade the visual quality of the site for the period of construction. Due to the limited duration of construction, and the passive quality of site views, the effects of the construction on the visual quality of the site would be less than significant.

Following construction, views of the site would not be significantly changed. Views of eroded and over-steepened slopes would be replaced by views of RSP and launch rock. The RSP above the waterline would support grasses and shrubs over time.

3.3 Agriculture and Forestry Resources

Table 5: Agriculture and Forestry Resources CEQA Checklist

CEQA Checklist: Agriculture and Forestry Resources	Potentially Significant Impact	Less-than-significant Impact with Mitigation Incorporated	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	☐	☐	☐	☒

CEQA Checklist: Agriculture and Forestry Resources	Potentially Significant Impact	Less-than-significant Impact with Mitigation Incorporated	Less-than-significant Impact	No Impact
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?	☐	☐	☐	☒

3.3.1 Environmental Setting

San Joaquin County is one of the nation's top ten agricultural areas in productivity and market value, and agriculture in the County is a two-billion annual industry (San Joaquin County, 2016). The California Department of Conservation, Division of Land Resource Protection, maintains the Farmland Mapping and Monitoring Program (FMMP), which monitors the conversion of the State's farmland to and from agricultural use. The FMMP designates Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance as "Important Farmland." These designations are based on a combination of factors, with soil conditions and existing land use being the primary factors.

3.3.2 Regulatory Setting

The Farmland Mapping and Monitoring Program

The FMMP Guidance document defines the four Important Farmland designation as follows (California Department of Conservation, 2004):

PRIME FARMLAND (P): Farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

FARMLAND OF STATEWIDE IMPORTANCE (S): Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

UNIQUE FARMLAND (U): Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

FARMLAND OF LOCAL IMPORTANCE (L): Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

The Williamson Act

The California Land Conservation Act of 1965 (commonly known as the Williamson Act) established a voluntary tax incentive program for preserving agricultural and open space lands. A property owner enters into a 10-year contract with the local government (County), which places restrictions on the land in exchange for tax savings and are renewed automatically each year unless they are canceled or a Notice of Non-Renewal is filed with the County (California Department of Conservation, 2017).

The Proposed Project is within areas on designated Important Farmland (both Prime Farmland and Unique Farmland) as well as on parcels enrolled under Williamson Act contracts, although it is not being used for agricultural purposes.

3.3.3 Environmental Effects

No Action Alternative

Under the no-action alternative, no action would be taken to halt erosion at the proposed project area. Agriculture resources associated with the existing levees would remain unchanged for the immediate future. However, undermining of private property along the south (left bank) and encroachment near Highway 26 and the existing levee on the north (right bank) would persist. Continued erosion could result in continued loss of orchard trees.

Proposed Project

The Proposed Project would result in permanent changes to land designated as both Prime and Unique Farmland. All of these changes are located within the footprint of the existing Mormon Slough. The presence of the slough precludes these lands to be used for agricultural production in the future.

With respect to the temporary impacts to Prime and Unique farmland, approximately 2.74 acres of this temporary impact area would occur within existing, active agricultural land located along the southern border of the slough (APN 9318001, 9308008, and 9308010).

These temporary impacts would result in removal of these agricultural lands from production and agricultural operation during construction. Mitigation measures include provisions in specifications that allow for harvesting to continue, and restoration of farmland lost due to erosion. After the Proposed Project completion, these lands would be restored to their previous agricultural use.

3.3.4 Mitigation

Once the Proposed Project is constructed, the stabilized and restored slough channel will benefit existing agricultural operation and Important Farmland by providing protection from encroachment of the slough into the adjacent agricultural operations, and restoring some compromised land. Temporary impacts to Unique and Important Farmland would be less than Permanent effects to Unique and Important Farmland are expected to be beneficial. No mitigation is required.

3.4 Air Quality

This section analyzes the potential for the Proposed Project to violate air quality standards by creating or contributing to a condition of increased local concentration of criteria pollutants (ground level ozone, carbon monoxide, particulates) that can impact sensitive receptors.

Table 6: Air Quality CEQA Checklist

CEQA Checklist: Air Quality	Potentially Significant Impact	Less-than-significant Impact 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

3.4.1 Environmental Setting

The proposed erosion repairs will be consistent to maintenance activities as described in the Operations and Maintenance Manual for the Mormon Slough Project (USACE). The repair on the left (south) bank will start downstream of the existing Escalon Bellota Road bridge abutment.

Construction is expected to occur between June, 2021 and December, 2021.will require approximately 150 construction days (approximately six months). On-site construction equipment would include pickup trucks, compactors, dozers, backhoes/excavators, pavers, hydroseeding equipment, chippers, skidders, cranes, ATV's and a water truck.

Personnel, equipment, and imported materials would reach the proposed work area primarily via State Route 26 and Escalon Bellota Road. Access to various areas of the site would be along temporary and existing access roads. The construction labor force is estimated to include workers commuting in pick-up trucks daily, over the 150-day construction period, commuting from Stockton or one of the surrounding communities (round trip distance of about 50 miles). Material is likely to be sourced locally from on-site or nearby local quarries including sources in or around Stockton. As such, round trip distances for haul trucks will be similar to the distance workers commute and will likely be about 50 miles. Approximately 2,500 total haul truck trips would be required or an average of approximately 20 haul truck trips per day (based upon 25,000 CY of import and 500 CY of export and a 20 CY haul truck capacity). An Air Emissions Calculations Technical Memo was prepared on September 29, 2020 and is attached as **Appendix B**.

3.4.2 Environmental Effects

No Action Alternative

Under this alternative, no repairs would be made, eliminating any new emissions of criteria air pollutants to the project area. However, this alternative is associated with the greatest possibility of erosion and continued encroachment onto private property, the existing levee, and Highway 26. Subsequent emissions associated could impact air quality.

Proposed Project

Table 7 displays the estimated construction emissions associated with the proposed project. Estimated construction emissions are less than the San Joaquin Valley Air Pollution Control District (SJVAPCD) thresholds of significance. Therefore, air quality impacts associated with the proposed project would be ***less than significant***. **Attachment A** provides the assumptions input into the *Road Construction Emissions Model* and the detailed emissions estimates output.

Table 7: Proposed Project Annual Construction Emissions (tons)

Condition	ROG	CO	NOx	SO_2	PM_{10}	$PM_{2.5}$
2021 Construction Emissions	**0.33**	**3.06**	**3.38**	**0.01**	**0.53**	**0.22**
Significance Threshold	10	100	10	27	15	15
Less than Significant?	Yes	Yes	Yes	Yes	Yes	Yes

For all construction projects, compliance with SJVAPCD Regulation VIII (Fugitive PM10 Prohibitions) is required by law. Based on the size of the proposed project, the owner or operator would be required to provide written notification to the SJVAPCD at least 48 hours prior to commencing earthmoving activities. Based on the amount of disturbed area and material movement proposed by the project, the owner or operator would be required to submit a Dust Control Plan to the SJVAPCD for review and approval. A Dust Control Plan identifies the fugitive dust sources at the construction site and describes all of the dust control measures to be implemented before, during, and after any dust generating activity for the duration of a project.

3.4.3 Mitigation

AQ-1:The following Regulation VIII Control Measures are required and would reduce air quality emissions:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.

- When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
- An owner/operator of any site with 150 or more vehicle trips per day, or 20 or more vehicle trips per day by vehicles with three or more axles shall implement measures to prevent carryout and trackout.

3.5 Biological Resources

Parus Consulting conducted field surveys from September 23-25, 2019. The purpose of the surveys was to ascertain general site conditions and identify potentially suitable habitats special-status plant and wildlife species. Concurrent with surveys, we also collected multi-parameter data for the wetland delineation. Special-status or unusual biological resources identified during the literature review were ground-truthed during the field surveys to ensure mapping accuracy. Special attention was paid to sensitive habitats and areas potentially supporting special-status floral and faunal species.

The description of the environmental setting for biological resources is based on a biological assessment (BA), **Appendix C,** for the Upper Mormon Slough Flood and Erosion Repair project in San Joaquin County, California. This Biological Resources Assessment (BRA), **Appendix D**, has been prepared to support environmental compliance and regulatory agency permitting for the proposed project. The purpose of this report is to describe biological resources within the overall project area, specifically focusing on the area of potential effect for the project design. This report details the results of general wildlife surveys, focused special status species surveys, vegetation mapping, and wetland delineation work conducted in the project area.

Table 8: Biological Resources CEQA Checklist

CEQA Checklist: Biological Resources	Potentially Significant Impact	Less-than-significant Impact 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	☐	☒	☐	☐

CEQA Checklist: Biological Resources	Potentially Significant Impact	Less-than-significant Impact with Mitigation Incorporated	Less-than-significant Impact	No Impact
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?	☐	☐	☐	☒

3.5.1 Environmental Setting

The Proposed Project will participate in the San Joaquin County HCP. Purchase of credits in the HCP will result in full mitigation of terrestrial habitat impacts. The HCP will be responsible for pre-construction biological surveys and biological monitoring during construction. Since the HCP is designed and approved to fully mitigate terrestrial biological resource impacts, the following discussion is provided for informational purposes only.

The project area is mostly composed of an incised, riverine corridor with steep banks and relatively level land at the top of bank. Upper Mormon Slough is a perennial riverine feature that is approximately 75 feet wide at the ordinary high-water mark (OHWM). Extensive riparian vegetation is associated with Mormon Slough at the edge and above the OHWM, with mostly open water below the OHWM. Above the sloped portion of the riparian corridor, the top of bank and surrounding land is relatively level with limited topographical relief. Surrounding land uses consist of vineyards and orchards.

Vegetation

The project area comprises mixed riparian, riparian wetland (riverine), ruderal grassland, developed land and roads, and agriculture/orchards. A complete description of the community type is based on Holland (1986) and the extent to which it occurs on and within the project area is provided below. Vegetation in the project area is shown in Figure 7.

Mixed riparian woodland is the dominant native vegetation community present in the project area. This community occurs consistently throughout the project area and is mostly developed along the southern (north-facing) banks of the slough. Specifically, vegetation tends to occur along the lower banks and channel of Mormon Slough above the OHWM. In areas that transition to below the OHWM, some stands of sandbar willow (*Salix exigua*) are established in association with riparian wetland vegetation and open water. Tree and shrub canopy is predominantly composed mostly of native Valley oak (*Quercus lobata*), with interspersed Fremont's cottonwood (*Populus fremontii*), white alder (*Alnus rhombifolia*), box elder (*Acer negundo*), Oregon ash (*Fraxinus latifolia*), and arroyo willow (*Salix lasiolepis*) trees. Non-native, invasive species include tree of heaven (*Ailanthus altissima*), black locust (*Robinia pseudoacacia*), and giant reed (*Arundo donax*) also occur here.

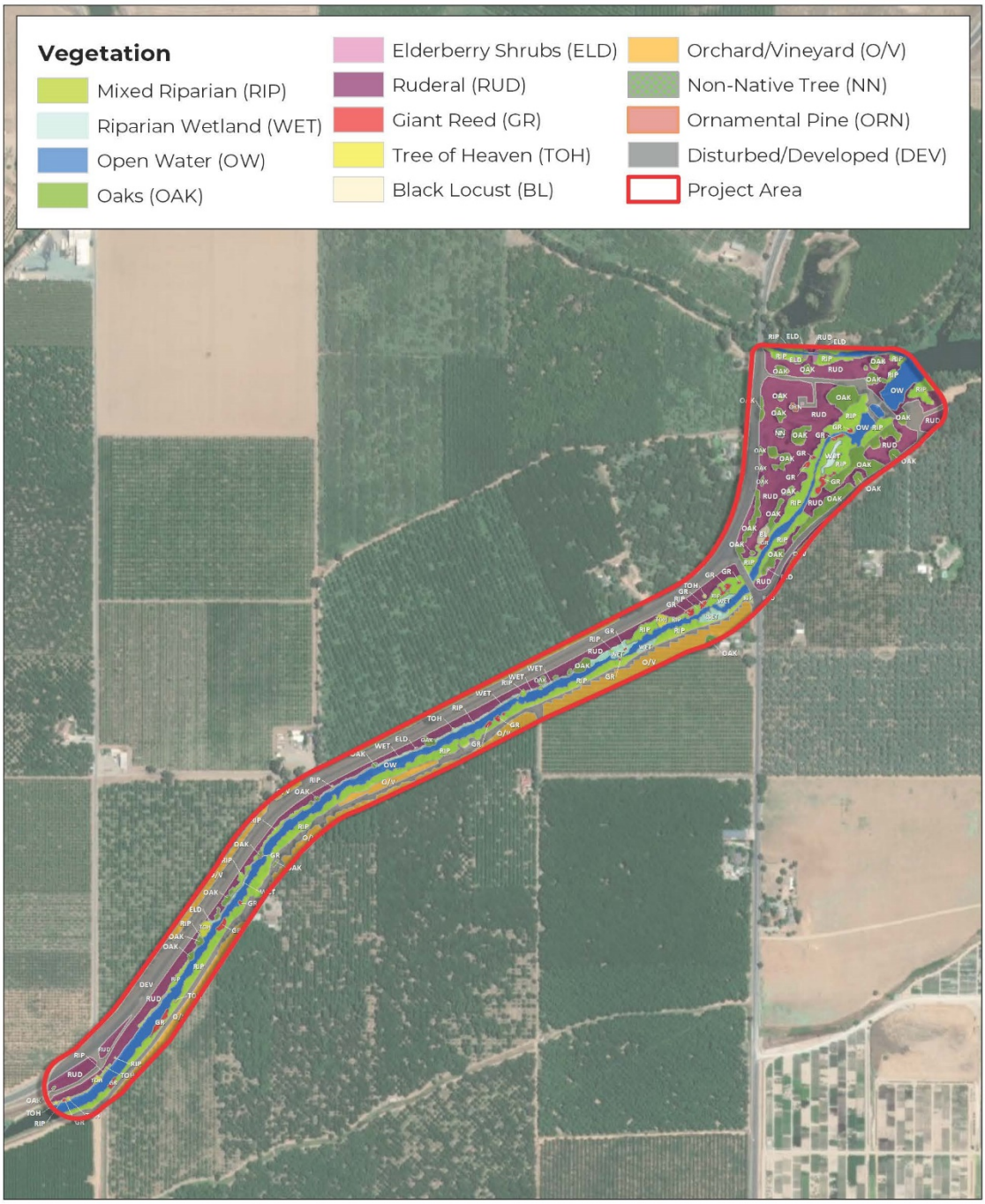
Several elderberry shrubs (*Sambucus mexicana*) were also identified within this vegetation community onsite. Other associated species include California wild grape (*Vitis californica*), Himalayan blackberry (*Rubus discolor*), mugwort (*Artemisia douglasiana*), and miner's lettuce (*Claytonia perfoliata*). Mixed riparian woodland covers approximately 9.87 acres of the project area.

Riparian Wetland (Riverine)

The wetland and aquatic habitat within the project area is characterized by a perennial riverine feature that periodically floods. Mormon Slough separates from the Calaveras River at the Bellota Weir, a small dam with removable checks and flow control side gates. Riparian wetland (riverine) habitats are supported by perennial water that is relatively slow moving with a channel substrate of sand and small to medium-sized cobble. During low-flow conditions, water flows in a southeast direction through a narrow channel around gravel bars within the project area, specifically downstream from the bridge. The gravel bars tend to form at the base of eroded banks, which provide their source material.

Substrate deposition and vegetation growth patterns observed within the slough indicate that during medium-flow periods, water flows through the project area in a braided pattern. Open water non-vegetated riverine habitat occupies approximately 8.24 acres of the project area, while vegetated habitat that is largely composed of sandbar willow and associated species such as nutsedges (*Cyperus* spp.), smartweeds (Polygonum spp.), and Johnsongrass (*Sorghum halepense*) covers approximately 5.95 acres of the project area.

Figure 7: Vegetation



347 Group
A DVBE & SDVOSB CERTIFIED COMPANY
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Upper Mormon Slough - Erosion Repair
San Joaquin County, CA

VEGETATION

Sources of Data: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, GIS User Community, and Parus Consulting, Inc. Map Created On: 9/7/2020

USGS 7.5-Minute Series - Linden Quadrangle;
T. 2N, R. 9E,
Sections 5, 6, and 7
25-acre study area

N

0 225 450 900 Feet
1:10,800

Ruderal

Ruderal (weedy) herbaceous vegetation occurs on the upper portions of the northern banks of the slough corridor and in some areas along the southern bank. This area is composed of non-native annual grasses such as soft chess brome (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*) and medusahead (*Taeniantherum medusae*) as well as non-native forbs including yellow star thistle (*Centaurea solstitialis*), field mustard (*Hirschfeldia incana*), milk thistle (*Silybum marianum*), Italian thistle (*Carduus pycnocephalus*), and jimson weed (*Datura stramonium*). These areas appear to be regularly maintained and constitute approximately 11.00 acres of the project area.

Orchard/Vineyard

The surrounding habitat is dominated by orchards and some vineyards and associated agricultural land. The orchards and vineyards are to the north and south of the project area, along both sides of Highway 26. These areas are highly maintained and cultivated and compose approximately 1.55 acres of the project area.

Developed/Disturbed

Disturbed land is classified as areas that have been physically disturbed (by current and/or previous legal human activity) and are no longer recognizable as a native or naturalized vegetation community, but continues to retain a soil substrate. Typically, vegetation, if present, is nearly exclusively composed of non-native plant species such as ornamentals or weedy species that take advantage of disturbance, or shows signs of past or present animal usage that removes any capability of providing viable natural habitat for uses other than dispersal. Examples of disturbed land include areas that have been graded, repeatedly cleared for fuel management purposes and/or experienced repeated use that prevents natural revegetation (i.e., dirt parking lots, trails that have been present for several decades), recently graded firebreaks, graded construction pads, construction staging areas, off-road vehicle trails, and old home-sites.

Developed land is classified as areas that have been constructed upon or otherwise physically altered to an extent that native vegetation is no longer supported and retains no soil substrate. Developed land is characterized by permanent or semi-permanent structures, pavement, or hardscape, and landscaped areas that often require irrigation. Areas where no natural land is evident because a large amount of debris or other materials have been placed upon it may also be considered urban/developed (e.g. car recycling plant, quarry). In the project area, this area is composed of portions of upper Mormon Slough that currently have rock slope protection, pump intakes, or where banks are very steep with little to no vegetation. Developed areas consist primarily of rural residential housing and unpaved and paved roads. The primary roadways in the area are Escalon Bellota Road, East Shelton Road, and State Route 26. These cover approximately 7.49 acres of the project area.

Trees (Valley Oak Woodland)

Within the project area, oak tree canopy occupies approximately a total of 4.56 acres, especially at the far eastern end of the project area that is proposed as a staging area.

Wildlife

The vegetation communities described above support habitat for numerous local wildlife species typical of both open water/riparian, associated upland, ruderal and orchard habitats. Wildlife species observed in the project area include locally common and abundant species such as rock pigeon (*Columba livia*), killdeer (*Charadrius vociferus*), house finch (*Carpodacus mexicanus*), northern mockingbird (*Mimus polyglottos*), mourning dove (*Zenaida macroura*), and common raven (*Corvus corax*). Common merganser (*Mergus merganser*) and great blue

heron (*Ardea herodias)* were noted in association within riverine habitat, while red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), and turkey vulture (*Cathartes aura*) were also present in the project area. Raccoon (*Procyon lotor*) and striped skunk (*Mephitis mephitis*) are mammals known from the project area. There was evidence of burrows in the stream bank near the waterline that may indicate beaver (*Castor canadensis*) or muskrat (*Ondatra zibethicus*). No swallows were observed in the project area during the surveys; however, abandoned mud nests were observed under the bridge.

3.5.2 Special-Status Biological Resources

Sensitive Plant Communities

Special-status plant communities are considered sensitive biological resources based on Federal, State, or local laws regulating their development, limited distributions, and habitat requirements of special-status plant or wildlife species that occur within them. The riparian woodland and wetland communities within the Mormon Slough corridor are considered potentially sensitive natural communities within the project area. However, the channel is excavated and frequently maintained which limits its quality.

Special-Status Plants

Special-status plant species are those considered rare, threatened, or endangered by the United States Fish and Wildlife Service (USFWS), California Native Plant Society (CNPS) or CDFW. The Special-Status Plant Species **Table 9** identifies 15 special-status plant species and CNPS sensitive species that have been recorded to occur within the region, as recorded by the California Natural Diversity Database (CNDDB), Information for Planning and Consultation (IPaC) and California Native Plant Society Endangered Inventory (CNPSEI). The table also includes the species' status, required habitat, and potential to occur within the project area.

Although none of these species have been recorded or are considered likely to occur in the project area, primarily based on the highly disturbed condition of potential suitable habitat. However site-specific floristic surveys were not made and a few of these species could occur in the project area and include wetland dependent species that were not found during surveys.

Table 9: Special-Status Plants

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur	Potential for Adverse Effects / Inclusion in Recommendations
	USFWS[1]	CDFW[2]	CNPS[3]			
Astragalus tener var. tener tener Alkali milk-vetch	—	—	1B.1	Alkali playa, valley and foothill grassland, vernal pools.	Unlikely- no vernal pool or alkali playa habitat is present.	No adverse effects
Atriplex cordulata var. cordulata Heartscale	—	—	1B.2	Chenopod scrub, valley and foothill grassland, meadows and seeps.	Unlikely-suitable habitat is not present. No recorded occurrences are within 5 miles of the project area.	No adverse effects

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur	Potential for Adverse Effects / Inclusion in Recommendations
	USFWS[1]	CDFW[2]	CNPS[3]			
Atriplex depressa Brittlescale	—	—	1B.1	Chenopod scrub, meadows and seeps, playas, valley and foothill grasslands, vernal pools.	Unlikely-suitable habitat is not present. No recorded occurrences are within 5 miles of the project area.	No adverse effects
Atriplex joaquiniana San Joaquin spearscale	—	—	1B.1	Chenopod scrub, meadows and seeps, playas, and valley and foothill grasslands.	Unlikely-suitable habitat is not present. No recorded occurrences are within 5 miles of the project area.	No adverse effects
Blepharizonia Plumose Big tarplant	FE	—	1B.1	Dry hills & plains in annual grassland. Clay to clay-loam soils; usually on slopes.	Unlikely-suitable habitat is not present. No recorded occurrences are within 5 miles of the project area.	No adverse effects
California Macrophylla Round--leaved filaree	—	—	1B.2	Cismontane woodland, valley and foothill grassland.	Unlikely-suitable habitat is not present. No recorded occurrences are within 5 miles of the project area.	No adverse effects
Cirsium crassicaule Slough thistle	—	—	1B.1	Chenopod scrub, marshes and swamps, riparian scrub.	Low potential-riparian wetland habitat is suitable; however, this species was not observed and there are no records within 5 miles of the project area.	No adverse effects
Eryngium racemosum Delta button-celery	—	SE	1B.1	Riparian scrub	Low potential-riparian wetland habitat is suitable; however, this species was not	No adverse effects

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur	Potential for Adverse Effects / Inclusion in Recommendations
	USFWS[1]	CDFW[2]	CNPS[3]			
					observed and there are no records within 5 miles of the project area.	
Hibiscus lasiocarpos var. occidentalis Wooly rose-mallow	—	—	1B.1	Marshes and freshwater swamps	Low potential-riparian wetland habitat is suitable; however, this species was not observed and there are no records within 5 miles of the project area.	No adverse effects
Lilaeopsis masonii Mason's lilaeopsis	—	—	1B.1	Marshes and swamps, riparian scrub	Low potential-riparian wetland habitat is suitable, however, this species was not observed and there are no records within 5 miles of the project area.	No adverse effects
Limosella australis Delta mudwort	—	—	2B.2	Marshes and swamps, riparian scrub	Low potential-riparian wetland habitat is suitable; however, this species was not observed and there are no records within 5 miles of the project area.	No adverse effects
Navarretia nigeliformis ssp. radians Shining navarretia	—	—	1B.1	Cismontane woodland, valley and foothill grassland, vernal pools	Unlikely-suitable habitat is not present. No recorded occurrences are within 5 miles of the project area.	No adverse effects
Sagitaria sanfordii Sanford's arrowhead	—	—	1B.1	Marshes and swamps	Low potential-riparian wetland habitat is suitable; however, this	No adverse effects

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur	Potential for Adverse Effects / Inclusion in Recommendations
	USFWS[1]	CDFW[2]	CNPS[3]			
					species was not observed and there are no records within 5 miles of the project area.	
Symphyotrichum lentum Suisun Marsh aster	—	—	1B.1	Marshes and brackish and freshwater swamps	Low potential- riparian wetland habitat is suitable; however, this species was not observed and there are no records within 5 miles of the project area.	No adverse effects
Tropidocarpum capparideum Caper-fruited tropidocarpum	—	—	1B.1	Valley and foothill grassland Bloom period: March-April 1-455 m.	Unlikely-this species was not observed and there are no records within 5 miles of the project area.	No adverse effects

Code Designations

[1] **Federal Status: 2019 USFWS Listing**

FE = Listed as endangered under the Endangered Species Act
FT = Listed as threatened under the Endangered Species Act
FC = Candidate for listing (threatened or endangered) under Endangered Species Act
FD = Delisted in accordance with the Endangered Species Act
— = Not federally listed

[2] **State Status: 2019 CDFW Listing**

SE = Listed as endangered under the California Endangered Species Act
ST = Listed as threatened under the California Endangered Species Act
SSC = Species of Special Concern as identified by CDFW
CFP = Listed as fully protected under FGC
CR = Species identified as rare by CDFW
— = Not state listed

[3] **CNPS: 2019 CNPS Listing**

1A = Plants species that presumed extinct in California.
1B = Plant species that are rare, threatened, or endangered in California and elsewhere.
List 2 = Plant species that are rare, threatened, or endangered in California, but more common elsewhere.
List 3 = Plants which we need more information- a review list
Blooming period:
Months in parentheses are uncommon.

[4] **Habitat description:** Habitat description adapted from CNDDB (CDFW 2019) and CNPS online inventory (CNPS 2019).

Special-Status Wildlife

Special-status wildlife species are those considered rare, threatened, or endangered by the USFWS, CNPS or CDFW. The Special-Status Wildlife Species **Table 10** identifies 46 federal and state listed threatened and/or endangered wildlife species, and state species of special concern that have been recorded in the CNDDB (CDFW 2019) as occurring within 5 miles of the project area within the Linden, California topographic quadrangle. The table also includes the species' status, required habitat, and potential to occur within the project area.

Most of the special-status wildlife species identified are unlikely to occur due to the absence of suitable habitat. Of the 46 special-status species considered, the following threatened, endangered or special status species could occur in the project area:

- Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) Federal Threatened
- Central Valley steelhead DPS (*Oncorhynchus mykiss*) Federal Endangered, State Threatened
- Fall-run chinook salmon (*Oncorhynchus tshawytscha*) Federal Essential Fish Habitat
- Swainson's hawk (*Buteo swainsoni*) State Threatened

The project area also includes USFWS-designated critical habitat for steelhead (IPac 2019) and Essential Fish Habitat for Fall-run chinook salmon. Appendix C contains a Biological Assessment that describes the fish habitat and potential impacts.

Table 10: Special-Status Wildlife

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur	Potential for Adverse Effects / Inclusion in Recommendations
	USFWS[1]	CDFW[2]			
Invertebrates					
Branchinecta lynchi Vernal pool fairy shrimp	FE	—	Vernal pools of California's Central Valley	**No Potential-**no vernal pools or other seasonal wetlands are present in the project area.	No adverse effects
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	FT	—	Elderberry shrubs	**Low-**several elderberry shrubs the required habitat for this species are present.	No likely adverse effects; discussed in report
Lepidurus packardi Vernal Pool tadpole shrimp	FE	—	Vernal pools, clay flats, roadside ditches, and road ruts	**No Potential-**no vernal pools or other seasonal wetlands are present in the project area.	No adverse effects
Fish					
Oncorhynchus mykiss Steelhead	FE	ST	Cold headwaters, creeks, small to large rivers, cool lakes, estuaries, and oceans comprise the habitats collectively	**Low-** suitable habitat for passage is present.	No likely adverse effects; discussed in report

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur	Potential for Adverse Effects / Inclusion in Recommendations
	USFWS[1]	CDFW[2]			
Oncorhynchus tshawytscha Chinook salmon	EFH	-	Sacramento-San Joaquin	**Low-** suitable habitat for passage is present.	No likely adverse effects; discussed in report
Amphibians					
Ambystoma californiense California tiger salamander	FT	ST	Breeds in vernal pools and stock ponds of central California. Adults aestivate in grassland habitats adjacent to the breeding sites.	**No Potential-**no vernal pools or other seasonal wetlands are present in the project area.	No adverse effects
Rana draytonii California red-legged frog	FT		Lowlands & foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	**Unlikely-**the lack of optimal habitat conditions and CNDDB records likely precludes presence.	No adverse effects
Reptiles					
Thamnophis gigas Giant garter snake	FT	ST	Found primarily in marshes, sloughs, drainage canals, and irrigation ditches, especially around rice fields, and occasionally in slow-moving creeks. Prefers locations with vegetation close to the water for basking.	**Unlikely-**although suitable habitat is present, project area is outside the distributional range of this species.	No adverse effects
Birds					
Aquila chrysaetos Golden eagle	— MBTA	FP FGC	Found in rolling foothills, mountain areas, sage-juniper flats, and desert. Prefers cliff-walled canyons to provide nesting habitat as well as large trees in open areas.	**Low-**species could forage in vicinity of project area; not likely to nest.	No adverse effects
Buteo swainsoni Swainson's hawk	— MBTA	ST FGC	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain	**Potential to Occur-** suitable foraging habitat is present (agricultural fields and suitable prey base) and nesting habitat is available in the trees located in the project area. This	Potential adverse effects include removal of nesting trees, discussed further in report.

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur	Potential for Adverse Effects / Inclusion in Recommendations
	USFWS[1]	CDFW[2]			
			fields supporting rodent populations.	species has been observed in the area.	
Coccyzus americanus occidentalis Western yellow-billed cuckoo	MBTA FC	SE	Nesting habitat is cottonwood/willow riparian forest. Occurs only along the upper Sacramento Valley portion of the Sacramento River, the Feather River in Sutter Co., the south fork of the Kern River in Kern Co., and along the Santa Ana, Amargosa, and lower Colorado rivers.	**No Potential:** lack of extensive riparian vegetation precludes presence.	No adverse effects
Elanus leucurus White-tailed kite	— MBTA	FP FGC	Found in rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Requires open grasslands, meadows, or marshes for foraging close to the isolated, dense-topped trees for nesting and perching.	**Potential to Occur:** Suitable foraging habitat is present (agricultural fields and suitable prey base) and nesting habitat is available in the trees located in the project area. This species has been observed in the area.	Potential adverse effects include removal of nesting trees, discussed further in report.
Falco peregrinus Peregrine falcon	-- MBTA	FP	Coastal sage scrub communities that are associated with coastal dunes, perennial grasslands, annual grasslands, croplands, pastures, coast Douglas-fir hardwood forests, coastal oak woodlands, montane hardwood woodlands, closed-cone pine-cypress woodlands, chamise-red shank chaparral, and mixed-chaparral communities.. East of San Francisco Bay,	**Unlikely:** suitable habitats are limited and no recorded occurrences are within 5 miles.	No adverse effects

Scientific Name Common Name	Status USFWS[1]	Status CDFW[2]	Habitat Description[3]	Potential to Occur	Potential for Adverse Effects / Inclusion in Recommendations
			peregrine falcons occupy cliffs and rocky areas in coastal sage scrub habitat on southwest-facing slopes.		
Haliaeetus leucocephalus Bald eagle	FD MBTA	SE FP FGC	Occurs along ocean shoreline, lake margins, and rivers for nesting and wintering. Most nests are within one mile of water. Nest in large, old-growth or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	**Unlikely:** suitable habitats are limited and no recorded occurrences are within 5 miles.	No adverse effects
Laterallus jamaicensis coturniculus California black rail	— MBTA	ST FP	Inhabits freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays. Requires water depth of about 1 inch that does not fluctuate during the year, and dense vegetation for nesting.	**Unlikely-**no suitable habitats are present. No recorded occurrences are within 5 miles.	No adverse effects
Mammals					
Neotoma fuscipes riparia Riparian woodrat	FE	—	Rivers, creeks and stock ponds of the Sierra foothills and coast range, preferring pools with overhanging vegetation.	**Unlikely-**riparian habitat is not extensive enough to support this species.	No adverse effects
Sylvilagus bachmani riparius Riparian brush rabbit	FE	SE	Riparian oak forests with a dense understory of wild roses, grapes, and blackberries.	**Unlikely-**riparian habitat is not extensive enough to support this species.	No adverse effects
Vulpes macrotis mutica San Joaquin kit fox	FE	ST	Arid and semi-arid regions encompassing desert scrub, chaparral, halophytic, and grassland communities. Areas with sparse ground cover are preferred. It is found in elevations ranging from 400–1,900 m	**Unlikely-**no evidence found and habitat is not optimal for this species.	No adverse effects

Code Designations	
[1] Federal Status: 2019 USFWS Listing	[2] State Status: 2019 CDFW Listing
ESU = Evolutionary Significant Unit is a distinctive population. **FE** = Listed as endangered under the FESA. **FT** = Listed as threatened under the FESA. **EFH** = Essential Fish Habitat Designated Magnuson-Stevens Act **FD** = Delisted in accordance with the FESA. — = Not federally listed	**SE** = Listed as endangered under the CESA. **ST** = Listed as threatened under the CESA. **FP** = Listed as fully protected under FGC. **CFG** = FGC =protected by FGC 3503.5 — = Not state listed
[3] **Habitat description**: Habitat description adapted from CNDDB (CDFW 2019).	

3.5.3 Regulatory Setting

Federal Policies and Regulations

Endangered Species Act

The Federal Endangered Species Act (FESA), Section 9 prohibits take of threatened and endangered species. Take is defined as actions to, "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. Procedures for addressing impacts to federally listed species follow two principal pathways, both of which require consultation with the USFWS, which administers the FESA for all terrestrial species. The first pathway is the Section 10(a) incidental take permit, which applies to situations where a non-federal government entity must resolve potential adverse impacts to species protected under FESA. The second pathway is Section 7 consultation, which applies to projects undertaken by a federal agency or private projects requiring a federal permit or approval.

Since the United States Army Corps of Engineers (USACE) holds regulatory authority for the proposed project under Section 404 of the Clean Water Act, FESA Section 7 would apply. By participation in the San Joaquin HCP, consultation under Section 7 consultation will only be required with NMFS. Potential take of terrestrial species under the jurisdiction of USFWS is fully addressed through the HCP.

Migratory Bird Treaty Act

The Federal Migratory Bird Treaty Act (MBTA) prohibits trade, possession or damage to migratory birds, their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the Fish and Game Code. All raptors and their nests are protected from take or disturbance under the MBTA (16 United States Code [USC] § 703, *et seq*.) and California statute (Fish and Game Code [FGC] § 3503.5). wildlife

Executive Order 13112—Invasive Species

Executive Order (EO) 13112 directs all federal agencies to refrain from authorizing, funding, or carrying out actions or projects that may spread invasive species. The order further directs federal agencies to prevent the introduction of invasive species, control and monitor existing invasive species populations, restore native species to invaded ecosystems, research and develop prevention and control methods for invasive species, and promote public education on invasive species. As part of the proposed action, the USFWS and USACE would issue permits and therefore would be responsible for ensuring that the proposed action complies with EO 13112 and does not contribute to the spread of invasive species.

Clean Water Act

Sections 10 and 404

USACE administers Sections 10 and 404 of the Federal Clean Water Act (CWA), which regulates the discharge of dredge and fill material into waters of the United States. The USACE has established a series of nationwide permits (NWPs) that authorize certain activities in waters of the United States, if a proposed activity can demonstrate compliance with standard conditions. Normally, the USACE requires an individual permit (IP) for an activity that will affect (fill or otherwise remove) an area in excess of 0.5-acre of waters of the United States. Projects that result in impacts less than 0.5 acre can typically be conducted pursuant to one of the nationwide permits, if they are consistent with the standard permit conditions.

The USACE also has discretionary authority to require an environmental document (e.g. Environmental Impact Statement (EIS) or Environmental Assessment (EA)) for projects that result in impacts to an area between 0.1 and 0.5 acre and above 0.5-acre. A Pre-Construction Notification (PCN) for coverage under Nationwide Permit 3 (Maintenance) was submitted to USACE on December 7, 2020.

Section 401

Section 401 of the CWA states: "any applicant for a federal permit for activities that involve a discharge to waters of the State, shall provide the Federal Permitting Agency a certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the Federal Clean Water Act." Therefore, before the USACE will issue a Section 404 permit, applicants must apply for and receive a Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB). An application for Water Quality Certification was submitted to the Central Valley RWQCB on November 20, 2020.

State Policies and Regulations

CEQA Guidelines

The following California Environmental Quality Act (CEQA) Guidelines serve as thresholds of significance for determining potentially significant impacts to the biological resources identified in this report:

Has a substantial adverse effect, either directly or through habitat modifications, on any species identified as being a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or USFWS.

Has a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.

Has a substantial adverse effect on federally protected wetlands as defined by Sections 10 and/or 404 of the CWA (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Interferes substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impedes the use of native wildlife nursery sites.

Conflicts with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Conflicts with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, state or federal habitat conservation plan.

California Endangered Species Act

The California Endangered Species Act (CESA) requires State agencies to consult with CDFW on projects or actions that could affect listed species, directs the CDFW to determine whether jeopardy would occur, and allows the CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species (FGC § 2080). CESA allows the CDFW to authorize exceptions to the State's prohibition against take of a listed species if the "take" of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA (FGC § 2081).

California Fish and Game Code

Under CESA, CDFW is responsible for maintaining a list of endangered and threatened species (FGC § 2070). Sections 2050 through 2098 of the Fish and Game Code outline the protection provided to California's rare, endangered, and threatened species.

The Native Plant Protection Act of 1977 (NPPA) prohibits the taking, possessing, or sale of any plants with a state designation of rare, threatened, or endangered (as defined by the CDFW) (FGC § 1900, *et seq*.). An exception to this prohibition in the NPPA allows landowners, under specified circumstances, to take listed plant species, provided that the owners first notify the CDFW and give the agency at least ten days to come and retrieve (and presumably replant) the plants before they are plowed under or otherwise destroyed. Fish and Game Code, Section 1913 exempts from "take" prohibition, "the removal of endangered or rare native plants from a canal, lateral ditch, building site, or road, or other right of way." Project impacts to these species are not considered significant unless the species are known to have a high potential to occur in the disturbance area associated with construction of the proposed project.

The CDFW also maintains lists of "Species of Special Concern" that serve as species "watch lists." The CDFW has identified many Species of Special Concern. Species with this status have limited distribution or the extent of their habitats has been reduced substantially, such that their populations may be threatened. Thus, their populations are monitored, and they may receive special attention during environmental review. While they do not have statutory protection, they may be considered rare under CEQA and thereby warrant specific protection measures.

Sensitive species that would qualify for listing but are not currently listed are afforded protection under CEQA. CEQA Guidelines Section 15065 (Mandatory Findings of Significance) requires that a substantial reduction in numbers of a rare or endangered species be considered a significant effect. CEQA Guidelines Section 15380 (Rare or Endangered Species) provides for the assessment of unlisted species as rare or endangered under CEQA if the species can be shown to meet the criteria for listing. Unlisted plant species on the CNPS Lists 1A , 1B, and 2 are typically considered under CEQA.

Sections 3500 to 5500 of the Fish and Game Code outline protection for fully protected species of mammals, birds, reptiles, amphibians, and fish. Species that are fully protected by these sections may not be taken or possessed at any time. The CDFW cannot issue permits or licenses that authorize the take of any fully protected species, except under certain circumstances such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock.

Under Section 3503.5 of the Fish and Game Code, it is unlawful to take, possess, or destroy any birds in the orders of *Falconiformes* or *Strigiformes* (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto. To comply with the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project study area and determine whether the proposed project will have a potentially significant impact on such species. In addition, the CDFW encourages informal consultation of any proposed project that may adversely affect a candidate species.

Section 1602 of the Fish and Game Code requires any entity to notify CDFW before beginning any activity that, "may substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of any river, stream, or lake... [or] deposit debris, waste, or other materials that could pass into any river, stream, or lake." "River, stream, or lake" includes waters that are episodic and perennial; and ephemeral streams, desert washes, and watercourses with a subsurface flow. A Lake or Streambed Alteration Agreement would be required if the CDFW determines that project activities may substantially adversely affect fish or wildlife resources through alterations to a covered body of water.

California Porter-Cologne Water Quality Control Act

The RWQCB regulates actions that would involve, "discharging waste, or proposing to discharge waste, within any region that could affect the water of the State," (Water Code § 13260(a)), pursuant to provisions of the Porter-Cologne Water Quality Act. "Water of the State" is defined as, "any surface water or groundwater, including saline waters, within the boundaries of the state," (Water Code § 13050(e)).

California Native Plant Society

The CNPS maintains a rank of plant species native to California that has low population numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CNPS ranked plants receive consideration under CEQA review. The following identifies the definitions of the CNPS ranks:

Rank 1A: Plants presumed Extinct in California

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

Rank 2: Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere

Rank 3: Plants about which we need more information—A Review List

Rank 4: Plants of limited distribution—A Watch List

All plants appearing on CNPS List 1 or 2 are considered to meet the CEQA Guidelines Section 15380 criteria. While only some of the plants ranked 3 and 4 meet the definitions of threatened or endangered species, the CNPS recommends that all Rank 3 and Rank 4 plants be evaluated for consideration under CEQA.

Local Policies and Regulations

Habitat Conservation Planning

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (HCP) comprises all of San Joaquin County. The HCP objectives include balancing the need to conserve open space and the need to convert

open space to non-open space uses while protecting the region's agricultural economy, preserving landowner property rights, providing for the long-term management of plant, fish and wildlife species— especially those that are currently listed or may be listed in the future under FESA or CESA, providing and maintaining multiple-use open spaces that contribute to the quality of life of the residents of San Joaquin County, and accommodating a growing population while minimizing costs to project proponents and society at large.

The SJMSCP, in accordance with FESA Section 10(a)(1)(B) and CESA Section 2081(b) Incidental Take Permits, provides compensation for the conversion of open space to non-open space uses that affects the plant, fish and wildlife species covered by the plan.

The mitigation ratios and compensation fees are determined on the basis of the type of lands that are being converted. The plan has established four land cover types: (1) Agricultural Habitat Lands, (2) Natural Lands (non-wetlands), (3) Natural Lands (vernal pools), and (4) Natural Lands (non-vernal pool wetlands). Figure 8 shows HCP zones within the project area.

On October 14, 2020 the Board of the San Joaquin HCP accepted the proposed project into the HCP. Upon full payment of applicable fees, the HCP will assume responsibility for compliance with FESA requirements for terrestrial species. Additionally, HCP biologists will conduct pre-construction biological surveys and biological monitoring during construction.

3.5.4 Environmental Effects

No Action Alternative

With this alternative, the area would remain unchanged from current conditions for the immediate future. However, undermining of private property along the south (left bank) and encroachment near Highway 26 and the existing levee on the north (right bank) would persist. Continued erosion could result in potentially significant impacts to biological resources as there would potentially be habitat loss, and potential for sediment to be released into waterways.

Proposed Project

Special Status Plants

Because of the lack of rare species found, the somewhat disturbed nature of the project area and lack of suitable habitat for some species, as described in Table 9, special-status plant species are not expected to occur within the project area. For these reasons, no special-status plant species would be adversely affected by the proposed project and no further studies are necessary.

Special Status Wildlife

Since many of the wildlife species described in Table 10 would not be found or expected to be adversely affected by the project, no further studies for these species were done. Species that may be affected are discussed below.

Valley Elderberry Longhorn Beetle

Although elderberry shrubs are not expected to be removed and can be avoided, the mitigation measures below would minimize any potential adverse effects to Valley Elderberry Longhorn Beetle (VELB).

Steelhead and Chinook salmon

Steelhead and Chinook Salmon migrate through Mormon Slough to spawning grounds on the Calaveras River above Bellotta Weir. Juvenile steelhead migrants may temporarily reside in the project area. Tree removal for slope grading could adversely impact the water temperature of Mormon Slough at its upper end, potentially warming faster and causing water temperatures to reach levels unsuitable for salmonids a few days sooner than presently occurs during early summer, although this effect is negligible.

Swainson's Hawk

Swainson's hawk could nest in or near the project area. Loss or alteration of habitat or nest site disturbance could result in (1) nest abandonment, (2) loss of young, (3) reduced health and vigor of eggs and/or nestlings (resulting in reduced survival rates); and (4) may ultimately result in the take (killing) of nestling or fledgling Swainson's hawks incidental to otherwise lawful activities.

The project will implement mitigation as recommended by the SJMSCP to ensure that any nest impacts from construction will not result in adverse effects on this species.

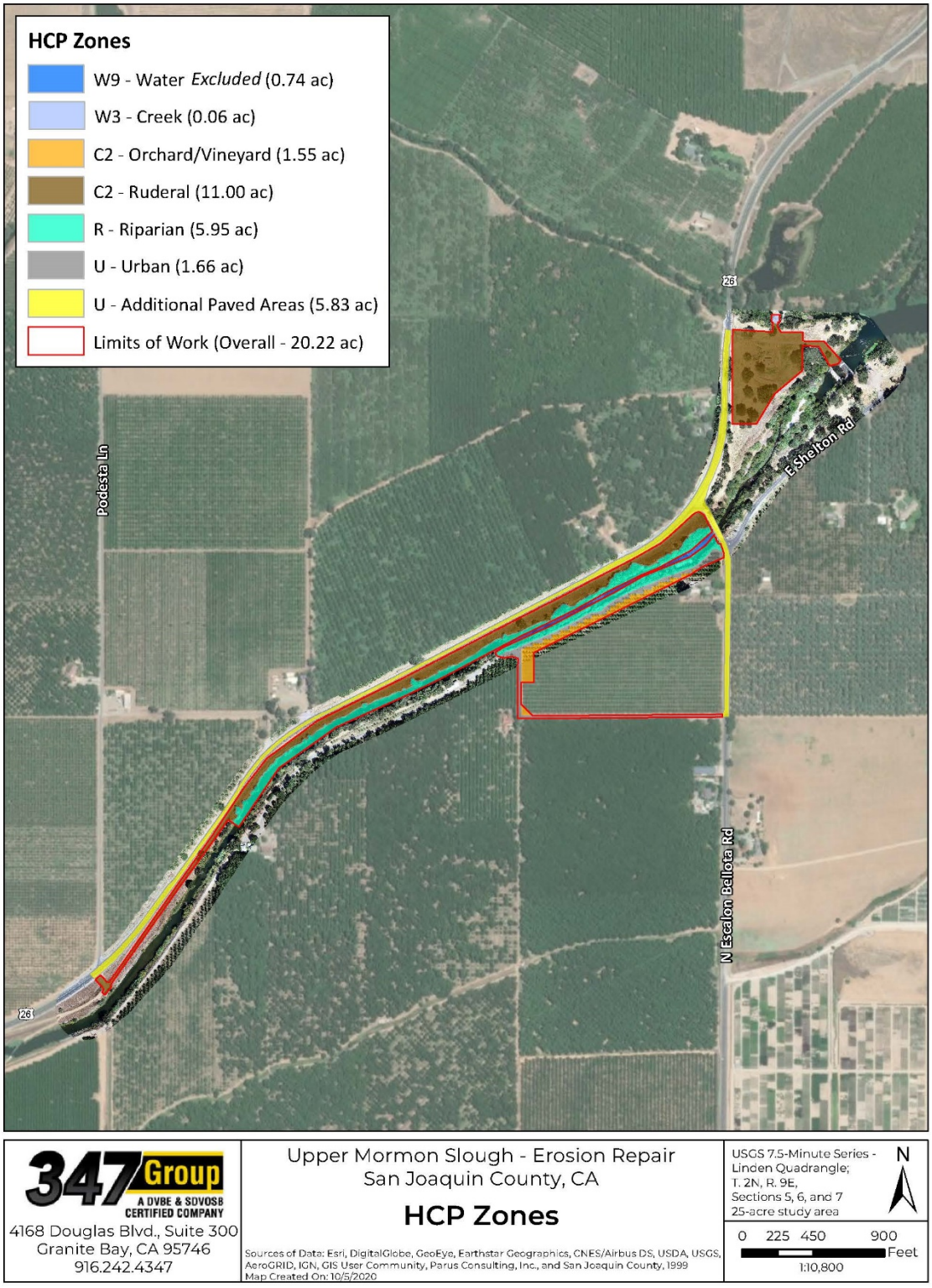
Tree Nesting Raptors and Other Migratory Birds

Potential impacts could occur to resident and migratory species during project construction, which would render the project temporarily unsuitable for birds because of the noise, vibrations, and increased activity levels associated with various construction activities.

Riparian Wetlands and Woodland

Project work that would result in removal or fill in the areas at and below the OHWM would require a Section 404 permit under the CWA. In addition, those areas that would involve substantial alteration to flow are subject to a 1602 Streambed Alteration Agreement with CDFW.

Figure 8: HCP Zones



3.5.5 Mitigation

Participation in the HCP will fully mitigate impacts to terrestrial species and their habitat. The HCP includes a 3:1 mitigation ratio for riparian habitat. Although much of the extant riparian habitat in the Project Area will be unaffected, the entire 5.95 acres of riparian habitat will be mitigated at a 3:1 ratio.

Steelhead and Chinook Salmon

The following mitigation measures were included in the Biological Assessment (BA) provided to USACE for its consultation with NMFS under Section 7 of FESA.

- **BIO-1:** All instream work will be completed between June 1 and October 31.
- **BIO-2** Ensure any sediment control measures are in place prior to the onset of the rainy season and monitored and maintained in good working condition until disturbed areas have been re-vegetated.
- **BIO-3:** Ensure a qualified fisheries biologist captures and relocates any fish present prior to channel restoration and bank realignment to ensure that all ESA-listed salmonids are captured, handled, and relocated safely
- **BIO-4:** Stockpile equipment and materials outside of riparian areas
- **BIO-5:** Ensure any new or previously excavated gravel material placed in the channel meets Caltrans' Gravel Cleanliness Specification #227 having a value of 85 or higher (excluding such materials as soil in the RSP to allow for riparian planting)
- **BIO-6:** Develop and implement site-specific BMPs, a water pollution control plan, and emergency spill control plan.

3.6 Cultural Resources

Archaeological sites, historic buildings and structures, landscapes, and objects are the fabric of our national heritage. Collectively known as cultural resources (or sometimes heritage assets), they are our tangible links with the past. This section describes the cultural (historical, archaeological, and paleontological) resources present, or potentially present on the erosion sites. A more detailed and comprehensive evaluation of the cultural background of the region, the projects potential impacts to cultural resources, and recommendations for project impact mitigation can be found in the Cultural Resources Inventory Report for this project, presented as **Appendix E.**

3.6.1 Cultural Resources Record Search

Prior to conducting the field survey, historical research was completed at the Central California Information Center of the California Historic Resources Information System (CHRIS) at California State University, Stanislaus on January 8, 2020. The search included a 0.25 mile radius around the APE for previously recorded archaeological sites and previous surveys. The review indicated six previously recorded resources within the quarter mile Environmental Study Limits (ESL). No resources are previously recorded within the Area of Potential Effects (APE), and one resource is recorded directly adjacent to the APE (P-39004531). Twelve prior surveys were conducted within the APE and ESL. The geo-archaeological research conducted for this survey indicated a high to very high potential for buried prehistoric resources and a moderate to high potential for prehistoric and historical resource surface resources within the parcel.

3.6.2 Native American Consultation

In accordance with PRC § 5097.91-5097-94, the Native American Heritage Commission (NAHC) maintains a catalog pertaining to places of special religious or social significance to Native Americans. In order to identify if places of religious or social significance exist within the APE, Parus contacted the NAHC on January 07, 2020 to request a review of their Sacred Lands Files.

The NAHC responded by email on January 08, 2020, stating that the Sacred Lands File search was negative and provided a list of individuals to be contacted regarding the project.

PRC § 21080.3.1, subd. (b), declares that California Native American Tribes traditionally and culturally affiliated with a geographic area may have expertise concerning their tribal cultural resources. As such, Parus contacted persons on the designated contact list maintained by the NAHC, providing each with a project description, location map, a request to respond to Parus with any relevant information, and a request to respond to the Lead Agency within 30 days, should the tribe wish to engage in formal government-to-government Consultation. Email or hard-copy notifications were sent to all parties on the NAHC list on January 16th, 2020.

On January 16th 2020 one party responded, requesting further information about the project and site visit to the project area. A site visit was scheduled, but due to the outbreak of Covid-19 and the subsequent mandatory shelter-in-place order from the Governor of California on March 15, 2020, the field visit has been postponed until the situation is resolved. An amendment to this report detailing the site visit will be filed following the visit.

3.6.3 Field Methodology

The field work portion of this survey was undertaken on February 7th, 2020, and conducted by Heidi Shaw, a Secretary of the Interior qualified archaeologist, and archaeological technician Matthew Petyo. All 25 acres were intensively surveyed in transects of 15 meters or less. Impediments to ground visibility were predominantly tall, dense grasses, and areas of impenetrable vegetation. Surface-scrapes were executed where visibility was poor and as needed throughout the project area. One isolated historical feature was identified as a result of survey efforts; no other cultural resources were identified. Due to the proximity of P-39-004531 to the project APE and the high to very high potential for subsurface cultural deposits in the APE.

Table 11: Cultural Resources CEQA Checklist

CEQA Checklist: Cultural Resources	Potentially Significant Impact	Less-than-significant Impact 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 as defined in Section 15064.5?	☐	☒	☐	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c. Disturb any human remains, including those	☐	☒	☐	☐

CEQA Checklist: Cultural Resources	Potentially Significant Impact	Less-than-significant Impact with Mitigation Incorporated	Less-than-significant Impact	No Impact
interred outside of formal cemeteries?				

3.6.4 Environmental Setting

The Proposed Project is located in eastern San Joaquin County, approximately 4 mi east of the town of Linden. The proposed erosion repair site is identified as NA0017 15 LM00.86 by the State Department of Water Resources (DWR).

The legal location of the project area is Township 2 North, Range 9 East, Sections 5, 6, and 7; Mt. Diablo Base Meridian, of the United States Geological Survey (USGS) Linden (1982) 7.5-Minute Series Quadrangle. Specific details can be found in the Cultural Resources Inventory Report for this project, presented as **Appendix E.**

3.6.5 Regulatory Setting

Federal Policies and Regulations

The Advisory Council on Historic Preservation (ACHP) has defined a federal undertaking in 36 Code of Federal Regulations (CFR) 800.16(y) as a "project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency; those carried out with federal financial assistance; those requiring a federal permit, license or approval; and those subject to State or local regulation administered pursuant to a delegation or approval by a federal agency" (Title 42 CFR 137.289).

This project is considered a federal undertaking and is subject to the National Environmental Policy Act (NEPA), and the National Historic Preservation Act (NHPA).

National Environmental Policy

NEPA mandates that federal agencies assess the potential effects of a proposed undertaking, including impacts on archaeological, historical, and cultural resources. Identifying, assessing, and resolving the potential effects to cultural and historical resources under NEPA is met by completing the Section 106 process of the NHPA.

National Historic Preservation Act

Properties of traditional religious and cultural importance to Native Americans are considered under Section 101 of the National Historic Preservation Act (NHPA). Section 106 requires federal agencies to take into account the effects of their undertakings on any district, site, building, structure, or object that is included in, or eligible for inclusion in, the NRHP and to afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings. Under this section, the significance of any adversely affected cultural resource is assessed and mitigation measures are proposed to reduce any impacts to an acceptable level.

State Policies and Regulations

California Environmental Quality Act

CEQA protects tribal cultural resources, unique archaeological resources, and historical resources under statutes 21074, 21083.2, 21084.1-3. CEQA requires that a lead agency determine if a project will have a significant impact on cultural resources. Should it be determined that a project will cause significant impacts to a cultural resource, the lead agency may require reasonable efforts to preserve cultural resources in place or to be left undisturbed. To the extent that a cultural resource cannot be left undisturbed, mitigation measures are required.

Assembly Bill 52 (AB 52) Native American Consultation & CEQA

In 2016, CEQA established a consultation process with all California Native American Tribes, including both federally and non-federally recognized tribes that are historically connected and culturally affiliated with the project location. This bill has established the TCR classification and requires consideration of Tribal Cultural Values in determination of project impacts and mitigation, requires tribal notice of the project, and requires meaningful consultation.

In accordance with PRC Section 21080.3.2(b), consultation ends when either both parties agree to mitigation measures, other agreements to avoid a significant effect on TCR's, or, when a party, acting in good faith and after reasonable effort concludes that mutual agreement cannot be reached.

Local Policies and Regulations

San Joaquin General Plan

The San Joaquin County General Plan (SJCGP 2035) guides the conservation, development, and utilization of the County's resources and acknowledges that resources may be impacted by development. The SJCGP addresses architectural, historical, archeological, and cultural resources in the Natural and Cultural Resources Element Section 3.4. The Goal of San Joaquin County is to protect historical and cultural resources, avoid destruction of resources, encourage public and private preservation efforts, register historic properties, protect archaeological and historical resources, consult with Native American tribes, encourage the adaptive reuse of historic structures, encourage land use that retains and enhances significant historic properties and sustains historical community character, and support educational and outreach programs that promote public awareness of and support the preservation of historical and cultural resources.

3.6.6 Environmental Effects

No Action Alternative

With the no action alternative, no work would be conducted. Therefore, the possibility of uncovering cultural resources would be eliminated. However, undermining of private property along the south (left bank) and encroachment near Highway 26 and the existing levee on the north (right bank) would persist. Continued erosion could lead to the destruction of any undiscovered artifacts within and around the proposed project area. Therefore, the No Action Alternative could result in significant effects on cultural resources.

Proposed Project

No cultural, tribal, or historic resources were identified within the APE. However, potentially significant cultural resources are present directly adjacent to the APE. To avoid any unintentional adverse effects to historic properties, the following mitigation measures will be implemented to reduce these impacts to less than significant.

3.6.7 Mitigation

With the implementation of these mitigation measures, the Cultural Resources Technical Report concludes a **Finding of No Adverse Impacts with Conditions** or changes to any cultural, tribal, or historical resources within the APE, for the purposes of CEQA.

1. **CUL-1:** ESAs shall be delineated to protect against inadvertent adverse effects to potential historic properties.
2. **CUL-2:** A SOI qualified prehistoric archaeological monitor shall be present for all ground disturbing work (including grubbing) in culturally designated areas.
3. **CUL-3:** A Late Discovery Plan shall be drafted and signed by all stakeholders (TBD) prior to the start of construction.
4. **CUL-4:** Areas within the project APE designated as ESAs shall be delineated with construction fencing prior to the start of construction and monitored periodically, per the Late Discovery Plan.
5. **CUL-5:** If human remains are encountered during construction, it is required that work stop immediately in that area and notification be made to the San Joaquin County Sheriff's Coroner's Division (CCR 15064.5(e) (1) (A); HSC Sec.7050.5). Contact information for the Chief Medical Examiner at the time of this report: San Joaquin County Sherriff's Coroner's Division; Dr. Michael Hunter– Chief Medical Examiner 7000 Michael N. Canlis Blvd. French Camp, CA 95231; Phone: (209) 468-4300 Email: mhunter@sjgov.org. If the coroner determines the remains to Native American, the Coroner shall contact the NAHC within 24 hours and collaboratively determine the Most Likely Descendant (CCR 15064.5(e)(1)(B).

3.7 Energy

Table 12: Energy CEQA Checklist

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

3.7.1 Environmental Setting

Temporary energy use in connection with project construction would entail consumption of diesel fuel and gasoline by construction equipment and by the transportation of earth moving equipment, construction materials, supplies, and construction personnel.

3.7.2 Environmental Effects

No Action Alternative

Under the no action alternative, no repairs would be made, eliminating the consumption of energy in the project area. However, erosion would persist, and subsequent repairs may have a greater impact on energy.

Proposed Project

a. **Less than Significant**. Construction activities and corresponding fuel energy consumption would be temporary and localized, as the use of diesel fuel and heavy-duty equipment would not be a long-term condition of the project. Per Construction Best Management Practices, all construction equipment would be maintained in proper tune according to manufacturer's specifications. In addition, the use of diesel construction equipment meeting current California Air Resources Board certification standards for off-road heavy-duty diesel engines would be maximized and unnecessary vehicle idling restricted to five minutes or less. With these measures in place, wasteful, inefficient, or unnecessary use of energy resources is not anticipated, and impacts would be less than significant.

b. **No Impact**. Through implementation of Construction Best Management Practices, the proposed project would not conflict with or obstruct any State or local plans for renewable energy or energy efficiency; therefore, there would be no impact.

3.8 Geology and Soils

Geomorphology is the scientific study of landforms and the processes that shape them. Fluvial geomorphology, the study of river channels and adjacent floodplains modified by river dynamics, is of particular relevance for the proposed action since it will occur within the river and floodplain corridor. Geomorphic processes relevant to the evaluation of the proposed project includes channel bed and bank erosion, channel migration, sediment storage and recruitment. This section discusses potential geomorphic impacts related to the proposed levee improvement at the Proposed Project site.

Table 13: Geology and Soils CEQA Checklist

CEQA Checklist: Geology and Soils	Potentially Significant Impact	Less-than-significant Impact 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: • Rupture of a known earthquake fault, as	☐	☐	☐	☒

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

3.8.1 Environmental Setting

Regional Geology

The Proposed Project is located within San Joaquin County, on the east side of California's Great Valley geomorphic province near the transition to the Sierra Nevada foothills to the east (California Geological Survey [CGS], 2002). The Proposed Project vicinity is underlain by Quaternary-age sediments of the Modesto Formation characterized as "foothill-derived silt, clay and minor sand" (Marchand and Bartow, 1979) and deposited by the Calaveras River.

These and other Quaternary sediments extend westward from the site vicinity across the Great Valley with relatively featureless and gently sloping to flat terrain. To the north, south, and east of the Proposed Project

vicinity, Tertiary and older sediments begin to outcrop in the Sierra Nevada foothills, with ground slopes and topographic relief generally increasing moving eastward toward the Sierra Nevada Range. There are no known active faults in the vicinity; the Foothills Fault System is located relatively far to the east and faults associated with the San Andreas System are located far to the west. Regional ground shaking can occur from earthquakes generated by these faults (Kleinfelder, 2020).

Soils

Soils in the area of effect consist of Columbia fine sandy loam, drained, 0 to 2 percent slopes and Cogna loam, 0 to 2 percent slopes (Natural Resources Conservation Service, 2016). Both are deep soils formed in alluvium from mixed rock sources. They are on low fan terraces and alluvial fans. Columbia fine sandy loam is somewhat poorly drained with slow runoff and moderately low permeability. Cogna loam is well drained with slow runoff and moderately high permeability.

Seismic Hazards

No known active faults or Alquist-Priolo earthquake zones are present in San Joaquin County. Although the site is within the Central Valley part of California that is considered to be seismically stable, earthquake activity in neighboring regions, namely the Sierra Nevada and the San Francisco Bay area, could affect the Proposed Project site with ground shaking. However, the closest active fault to the site is the Midland fault which is located more than 30 miles to the west of the site. The segments of the foothills fault system located to the east are generally not considered active and are not used as independent seismogenic sources by the United States Geological Survey (Field et al., 2014).

3.8.2 Environmental Effects

No Action Alternative

Under the No Action alternative, no activities would be conducted to halt erosion. Undermining of private property along the south (left bank) and encroachment near Highway 26 and the existing levee on the north (right bank) would persist. Eventually, emergency repair measures would likely need to be implemented to protect the slough and levee system.

Proposed Project

The proposed project would not increase hazards to levels significantly above current conditions and will provide increased level of safety. The Project would not affect any increase in seismic or soils related hazards, as there are no fault lines within the project area. All repairs would be required to comply with standard engineering practices for levee design. All borrow materials imported to the site would comply with standards for levee material.

As construction of the erosion repair sites would conclude prior to the rainy season the risk of water erosion is less than significant. Disturbing the topsoil during construction could increase the potential for wind erosion within the project area, therefore, the contractor would be required to implement a SWPPP and BMPs. The SWPPP will include an erosion control and restoration plan, a water quality monitoring plan, a hazardous materials management plan, and post construction BMPs. Implementation of these measures would reduce the potential effects of the Project on soil erosion or the loss of topsoil to a less-than-significant level.

3.8.3 Mitigation

GEO-1: Mitigation included would consist of preparation and implementation of a SWPPP to address erosion, stormwater runoff, sedimentation, and other construction-related pollutants during project construction until all areas disturbed during construction have been permanently stabilized. The preparation and implementation of the SWPPP is necessary to comply with the requirements of the county's erosion control ordinance and the state's NPDES general construction activity stormwater permit.

Implementation of mitigation which includes the SWPPP and associated BMPs would reduce the potential for erosion and sedimentation as a result of the proposed Project construction activities to less than significant. Further, the proposed Project would improve the stability of the levee by further reducing seepage and the potential for seepage-related failures.

3.9 Greenhouse Gas Emissions

Table 14: Greenhouse Gas Emissions CEQA Checklist

CEQA Checklist: Greenhouse Gas Emissions	Potentially Significant Impact	Less-than-significant Impact 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?	☐	☐	☐	☒

3.9.1 Environmental Setting

Greenhouse Gas (GHG) emissions, primarily carbon dioxide (CO2), from cars, power plants, and other human activities, are believed to be the primary cause of contemporary global warming due largely to the combustion of fossil fuels. Atmospheric concentrations of CO2, the principal GHG, are at elevated levels. Nitrous oxide (N2O) and free methane (CH4) are also believed to be contributors in small amounts.

3.9.2 Regulatory Setting

San Joaquin County Climate Action Plan

The SJVAPCD adopted the Climate Change Action Plan to assist the County in development of strategies and policies to reduce the impacts of project-specific greenhouse gas emissions contributing to climate change. Combustion of fuels is considered to be a direct GHG impact. A full discussion of GHG impacts is included as part of Section 7, Greenhouse Gas Emissions.

3.9.3 Environmental Effects

No Action Alternative

Under the no action alternative, no repairs would be made, eliminating the consumption of greenhouse gas emissions in the project area. However, erosion would persist, and subsequent repairs may have a greater impact on greenhouse gas emissions.

Proposed Project

According to the Air Emissions Calculations Technical Memorandum attached in **Appendix B,** The estimated GHG emissions associated with the proposed project would be approximately 706 metric tons of CO_2e.[7] The proposed project would be considered to have a significant impact if the proposed project would be in conflict with State plans, policies and regulations adopted for the purpose of reducing GHG emissions, such as AB 32, with the assumption that State plans, policies, and regulations, such as AB 32, will be successful in reducing GHG emissions and reducing the cumulative GHG emissions statewide by 2020 and beyond. It is important that the State has taken these measures, because no project individually could have a major impact (either positively or negatively) on the global concentration of GHG. The proposed project would not be in conflict with State plans, policies and regulations adopted for the purpose of reducing GHG emissions. Therefore, GHG emissions impacts associated with the proposed project would be ***less than significant***.

3.10 Hazards and Hazardous Materials

A hazardous material is a substance with physical or chemical properties that could pose a current or future risk to human health or ecological receptors when improperly handled, disposed of, or otherwise released into the environment. Hazardous materials are grouped into the following four categories based on their properties: toxic (causes adverse effects to human or wildlife health); ignitable (has the ability to burn); corrosive (causes severe skin burns or material degradation); and reactive (causes explosions or can generate toxic gases). A hazardous waste is any hazardous material that is discarded, abandoned, or will be recycled or disposed in accordance with regulatory guidance. With improper handling or by unforeseen accidents, hazardous materials and wastes may be released into the environment, resulting in health hazards to workers, the public, or the environment. The releases may occur directly to soil (which may then percolate to groundwater) or into the air in the form of vapors, fumes or fugitive dust.

Table 15: Hazards and Hazardous Materials CEQA Checklist

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

3.10.1 Environmental Setting

The levee systems are used as floodwater protection zones. Typical sources of contamination along the levee include trash deposited onsite (such as leaking refrigerant from kitchen appliances), contaminated sediment transported in the waterway and deposited onsite, and pesticides commonly used for weed control along the levee. The project area is primarily surrounded by agricultural uses. These lands may use and/or contain hazardous substance such as petroleum products and pesticides. In addition, underground storage tanks may be in the vicinity of the repair sites.

The State Department of Toxic Substances (DTSC) and the State Water Resources Control Board have online databases (EnviroStor and GeoTracker respectively) that were searched for known contamination sites within the proposed project area.

The Envirostor database identifies, "sites with known or potential contamination, and sites where DTSC's environmental oversight or review has been requested or required" (DTSC, Cleanup Sites). Similarly, GeoTracker is the Water Boards tracking system for, "sites that impact of have the potential to impact water quality as well as site cleanup records within the state of California" (State Water Resources Control Board).

A search of these two databases on September 3, 2020 did not result in finding any open known hazards within the project area. The closest closed sites are:

Puregro Linden Facility (Site ID 39070060)

Located 3.8 miles from the proposed project, the Site was originally owned by a small pesticide and fertilizer application firm named Hughes which reportedly mixed and stored pesticides products for retail sale between 1973 and 1981. In October 1981, a company called Brea purchased the Site and stored pesticide, bulk fertilizer and dormant spray, purportedly, in original, sealed containers for retail sale. Puregro, a subsidiary of Union Oil Company of California (Unocal) purchased the property from Brea in 1990 and removed all the pesticides and fertilizers from the site. Between 1992 and 1999, six steel aboveground storage tanks were demolished and removed from the Site. Puregro entered into a Voluntary Cleanup Agreement (VCA) with DTSC in 2005 for the purpose of conducting a Preliminary Endangerment Assessment (PEA) and selling the property. Chevron purchased the property in 2007 and is continuing the Site investigation with plans to sell the Site for future unrestricted use. As of April 29, 2008, no further action is required. Due to the distance from the project area as well as cleanup activities, this site is not likely to affect the proposed project.

Anderson Property (Site ID T0607700619)

Located 3.8 miles from the proposed project, this Leaking Underground Storage Tank Cleanup Site had potential diesel contaminants in the soil. As of March 19, 1996, the case was closed and the cleanup status completed. Due to the distance from the project area as well as cleanup activities, this site is not likely to affect the proposed project.

3.10.2 Regulatory Setting

Federal and State Regulations California Code of Regulations

Title 8 of the CCR addresses the control of hazardous substances. Section 5189 of Title 8 sets forth the Process Safety Management (PSM) standard for processes involving a highly hazardous chemical in excess of certain

quantities. PSM requires a process hazard analysis, current safety information, an employee participation program, written operating procedures, a mechanical integrity program, and other procedures.

Title 8 of the CCR also contains the California Occupational Safety and Health Administration regulations for worker safety, including the storage and handling of hazardous materials. It identifies protective equipment for workers who handle hazardous materials and establishes requirements for general facility safety.

California Government Code

Section 65962.5 of the California Government Code (CGC) requires that DTSC compile and update the Cortese List of hazardous waste facilities subject to corrective action and lands designated as hazardous waste properties or border zone properties.

Clean Air Act

The Clean Air Act authorizes the EPA to set National Ambient Air Quality Standards, which establish acceptable concentrations of six criteria pollutants: O3, CO, sulfur dioxide, lead, nitrogen dioxide and fine particulate matter (PM2.5). Refer to Section 5.10 for a complete discussion.

Clean Water Act

The CWA was designed to eliminate the release of high volumes of toxic substances to the nation's water bodies. For a complete discussion of the act, please refer to Section 5.7.

Code of Federal Regulations

Title 40 of the CFR Part 302 implements the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous materials release requirements and identifies hazardous substances, reportable quantities (RQs), and notification requirements. The National Response Center must be notified of an accidental release of a hazardous substance in excess of a RQ. CERCLA-listed hazardous substances and RQs are listed in 40 CFR Part 302.4.

The Emergency Planning and Community Right-to-Know Act (EPCRA) planning requirements, a list of Extremely Hazardous Substances, threshold planning quantities, and emergency response planning requirements are codified in 40 CFR Part 355. The Chemical Accident Prevention Provisions (40 CFR Part 68), identifies regulated substances, threshold quantities (TQs), and requirements for preventing accidental releases of these substances. A Risk Management Plan is required for any processes involving regulated substances in excess of their respective TQ.

The generation, transportation, treatment, storage and disposal of hazardous waste through a comprehensive management system is governed under 40 CFR Parts 260–272. These regulations also list the characteristics of hazardous wastes, including ignitability, corrosivity, reactivity and toxicity. Subtitle D of these parts grants authority for regulating nonhazardous waste to the state.

Comprehensive Environmental Response, Compensation, and Liability Act

Hazardous substances are governed in part by CERCLA (1980). CERCLA created a "superfund" and provides for the clean-up and remediation of closed and abandoned hazardous waste sites.

Hazardous Materials Release Response and Inventory Program

The Hazardous Materials Release Response and Inventory Program (CHSC Sections 25500–25520) establishes business and area plans for the handling and release of hazardous materials. Basic information on the location, type, quantity, and the health risks of hazardous materials handled, used, stored, or disposed of in the state, which could be accidentally released into the environment, is tracked by the local Certified Unified Program Agency (CUPA) within each region for the use and awareness of hazardous materials responders, firefighters, emergency care providers, regulatory agencies and other interested persons. The CUPA for the project area is the Stanislaus County Environmental Resources Hazardous Materials Division (SCERHMD).

The Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Water Code, §§ 13000-14958) regulates wastes that have the potential to cause loss of a beneficial use of California's waters. This act requires the RWQCB to establish reportable quantities of hazardous wastes and hazardous materials based on their potential to degrade the waters of the state. Any discharge of hazardous materials that is inconsistent with the discharge requirements of the facility must be reported to the appropriate authorities.

Resource Conservation and Recovery Act

The handling, storage, and disposal of both hazardous and non-hazardous wastes are addressed through the Resource Conservation and Recovery Act (42 USC 6901 et seq.) and it's implementing regulations (40 CFR Part 260 et seq.).

Safe Drinking Water and Toxic Enforcement Act

The Safe Drinking Water and Toxic Enforcement Act (Proposition 65), was enacted as a ballot initiative in November 1986. The proposition was intended by its authors to protect California citizens and the state's drinking water sources from chemicals known to cause cancer, birth defects, or other reproductive harm, and to inform citizens about exposures to such chemicals. The act requires the Governor to publish, at least annually, a list of chemicals known to the state to cause cancer or reproductive toxicity.

Superfund Amendments and Reauthorization Act

Title III of the Superfund Amendments and Reauthorization Act of 1986 establishes reporting requirements for businesses and facilities that store, handle, or produce significant quantities of hazardous substances. The act also requires states to establish a system to inform federal, state, and local authorities of any such substances stored or handled by the regulated community.

Toxic Release Contingency Plan

The Toxic Release Contingency Plan (CGC Section 8574.16) requires that regional and local planning agencies incorporate within their planning the state's effort to respond to emergency toxic releases and ensure the effective and efficient use of regional and local resources in the areas of traffic and crowd control, firefighting, hazardous materials response and cleanup, radio and communications control, and provision of medical emergency services.

Local Laws and Regulations

San Joaquin County General Plan Section 3 – Public Health and Safety

San Joaquin County administers a comprehensive County Hazardous Waste Management Plan. The focus is to address the problem of hazardous materials and wastes, as well as the location, storage, transportation, and safety of materials.

3.10.3 Environmental Effects

No Action Alternative

Under the No Action alternative, the slough would not undergo construction repairs and would remain in its current condition. This alternative does not threaten the release of known or unknown hazardous wastes or materials as a result of construction, nor would it conflict with any hazardous waste or material policy, plan, or regulation. Implementation would result in no impact to hazards and hazardous materials.

Proposed Project

The proposed erosion repairs will involve the use of heavy equipment for grading and vegetation removal at the site. Handling and transport of these materials could result in the exposure of workers to hazardous materials. The construction equipment used for this project will use diesel fuel and oil within the project footprint and construction laydown area. However, these materials will be used, stored and disposed of according to standard protocols for handling of hazardous materials.

All personnel involved in use of hazardous materials will be trained in emergency response and spill containment, and safe handling and storage of hazardous materials as required by implementation of the mitigation measures. In addition, the construction contractor would be required to implement a SWPPP and BMPs that would minimize the potential for construction-related spills of hazardous materials and wastes and would provide for appropriate and immediate cleanup of spills, if any were to occur. Preparation of a SWPPP is required (see "Hydrology and Water Quality" section). With implementation of mitigation measures any impacts related to use of hazardous materials during construction would be mitigated to less than significant.

While site construction and operation are not expected to increase the risk of wildland fires, the project area is located within an area rated as an LRA Moderate FHSZ. The construction contractor will be required to have a fire control and protection plan in place during construction. This risk would further be minimized by the removal of vegetation prior to construction. Construction of levee repairs is not anticipated to result in wildlands fires. This impact is considered to be less than significant and requires no additional mitigation.

3.10.4 Mitigation

HAZ-1: Hazardous Materials Training Program

Prior to initiating construction, the construction contractor shall be trained regarding the identification and handling of hazardous materials and spill containment and agency notification procedures. Should any known or suspected release of hazardous materials occur during proposed project construction or operation, the spills would be immediately addressed, and the affected soils would be containerized and tested to determine the appropriate disposal options. The County shall notify agencies and perform the required remediation if there is a release of reportable (or otherwise significant) quantities of hazardous materials. In the event of a fuel spill, the San Joaquin

County Department of Environmental Resources would be notified, and clean-up would be accomplished under the guidance of regulatory oversight, as required.

HAZ-2: Inadvertent Discovery of Contaminated Materials During Construction

Prior to initiating construction, the construction contractor will prepare a Construction Management Plan (CMP) that prescribes activities for workers to follow in areas where the presence of undocumented soil or groundwater contamination is suspected based on visual observation or smell. The CMP will include (but is not intended to be limited to) provisions for daily briefings of construction staff prior to work regarding what to look for, a list of contact persons in case of a possible encounter with undocumented contamination, provisions for immediate notification of construction management, notification of the applicable local enforcement agency, consultation with that agency, and protocols for further action. In such instances, construction activities would cease until it is determined in coordination with regulatory agencies that work can proceed without the risk of injury to persons or the environment.

3.11 Hydrology and Water Quality

This section presents the physical and regulatory setting for hydrology and water quality for the Proposed Project. The impact analysis considers the potential for the Proposed Project to result in excess surface runoff or flooding, exceed water quality standards, or interfere with groundwater recharge.

Table 16: Hydrology and Water Quality

CEQA Checklist: Hydrology and Water Quality	Potentially Significant Impact	Less-than-significant Impact with Mitigation Incorporated	Less-than-significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: • Result in a substantial erosion or siltation on – or off-site • Substantially increase the rate or amount of surface runoff in a manner which	☐	☐	☒	☐

CEQA Checklist: Hydrology and Water Quality	Potentially Significant Impact	Less-than-significant Impact with Mitigation Incorporated	Less-than-significant Impact	No Impact
would result in flooding on or offsite • 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 • Impede or redirect flood flows				
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

3.11.1 Environmental Setting

The Proposed Project is located in the Lower Calaveras-Mormon Slough Watershed and flows to the San Joaquin River, eventually converging with the Sacramento River and flowing into San Francisco Bay and the Pacific Ocean. Mormon Slough is a low-flow meandering channel that is highly variable in its configuration, with multiple contractions and expansions (particularly at the Escalon-Bellota Road Bridge site), and dense brush on the banks and overbanks.

Hydrology

The slough begins approximately 0.25-mile upstream from the bridge at the Bellota Weir. The four main tributaries entering the Calaveras River between New Hogan Dam and Bellota are South Gulch, Indian, Duck, and Cosgrove creeks. All are intermittent streams that dry up during the summer months and only flow during winter and spring runoff events.

Mormon Slough is an important local source of agricultural irrigation water. Water is released year-round for diversion from the New Hogan Dam, resulting in sustained year-round flows between New Hogan Dam and Bellota Weir in all but drought years. During the irrigation season, SEWD manages the release of water in the channel. During the non-irrigation season, the ACOE manages the release of water based on conservation or flood control conditions. Mormon Slough is now regulated by one dam upstream, the New Hogan Dam, operated by the ACOE. The weir diverts water into the SEWD municipal water treatment plant. Beneficial uses of the surface waters of the San Joaquin River include irrigation, recreation, transportation, and estuary/wildlife area. A Hydraulic Impact Analysis is attached as **Appendix F**, which evaluates the potential impact of the proposed project on the design water surface elevations (WSEL) and evaluates design flow velocities through the study reach.

Water Quality

Long-term agricultural land uses in the Sacramento-San Joaquin River Basin, specifically the widespread use of pesticides and fertilizers, have resulted in contamination of surface and groundwater, affecting humans, fish, and aquatic wildlife. Nitrate and 1,2,-Dibromo-3-choloropropane levels exceeding the state drinking water standards occur extensively in groundwater in the basin and public and domestic supply wells have been closed because of the levels of these and other contaminants in several locations (California SWRCB 2011). Sediment discharge from intensive agriculture is another common problem in the basin, affecting fisheries and serving as a means whereby toxic substances can enter the aquatic system.

List of Impaired Waters

Section 303(d) of the CWA requires states to identify waters within their borders that are not attaining water quality standards. Mormon Slough has been listed as impaired on the 303(d) TMDL required list for chlorpyrifos and an "unknown" toxicity (California SWRCB 2011). Chlorpyrifos is used to control pest insects in agricultural, residential and commercial settings. It is a man-made organophosphate insecticide. The source for "unknown" toxicity pollutant is unknown. The Central Valley RWQCB expected TMDL completion date for both chlorpyrifos and the "unknown" toxicity is 2021.

3.12 Regulatory Setting

3.12.1 Federal Laws and Requirements

Clean Water Act

In 1972 Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source unlawful unless the discharge is in compliance with a NPDES permit. Known today as the Clean Water Act (CWA), Congress has amended it several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The following discussion describes the CWA sections relevant to the Proposed Project.

Section 303

Section 303 of the CWA requires each state to adopt water quality objectives for surface waters. Section 303(d) of the CWA further requires states to maintain lists of impaired water bodies that may require additional protections (beyond traditional control measures) to ensure that water quality standards are realized and maintained. The State of California has calculated the Total Maximum Daily Load (TMDL) volumes for water bodies throughout the state. TMDL is the sum of individual pollutant load allocations from point sources, nonpoint sources, and natural background conditions, with an appropriate margin of safety. TMDL constituents that are considered to cause impairment to water bodies include inorganic and organic chemical compounds, metals, sediment, and biological agents. Mormon Slough is listed on the Section 303(d) TMDL list for chlorpyrifos and an "unknown" toxicity (California SWRCB 2011).

Section 401

Section 401 of the CWA specifies that any applicant for a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities that may result in any discharge into

navigable waters, shall provide the federal licensing or permitting agency a certification from the state agency with jurisdiction over those waters that the project will comply with water quality standards, including beneficial uses, water quality objectives, and the state anti-degradation policy. For projects in San Joaquin County, the responsible state agency is the Central Valley Regional Water Quality Control Board (RWQCB). Discharges of dredged or fill material into Mormon Slough are subject to the U.S. Army Corps of Engineers (USACE) jurisdiction under Section 404 of the CWA (see discussion below). Therefore, a Section 401 Water Quality Certification would be required for this project.

Section 404

The USACE and the EPA regulate the placement of dredged or fill material into "waters of the United States" under Section 404 of the CWA. Waters of the U.S. include lakes, rivers, streams, and their tributaries and wetlands. Wetlands are defined for regulatory purposes as "areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 Code of Federal Regulations [CFR] 328.3, 40 CFR 230.3). The USACE may issue either individual permits on a case-by-case basis or general permits on a program level for any fill proposed within waters under USACE jurisdiction. General permits are pre-authorized and are issued to cover classes of activities that are expected to cause only minimal adverse environmental effects. Nationwide Permits are general permits issued to cover particular fill activities. All Nationwide Permits have general conditions that must be met for the permits to apply to a particular project, as well as specific conditions that apply to each Nationwide Permit.

Mormon Slough within the project study area has been delineated for the purposes of the project, the slough meets the criteria of a water of the US. The proposed excavation and fill activities within Mormon Slough would require Section 404 authorization by the USACE.

3.12.2 State Laws and Requirements

Porter-Cologne Water Quality Control

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) (1969) is California's statutory authority for the protection of water quality, predating the CWA. Under the Porter-Cologne Act, the State regulates discharges to waters of the state through the adoption of water quality policies, plans, and objectives protecting the state's waters for the use and enjoyment of the people. This act requires that a Report of Waste Discharge be filed with the appropriate RWQCB for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. Waters of the state include not only waters of the U.S., but also those groundwater and surface water features not regulated by the USACE under Section 404 of the CWA. Following receipt of a Report of Waste Discharge, the RWQCB issues either Waste Discharge Requirements (WDRs) or a waiver for WDRs. Beginning in March 2003, the SWRCB began requiring NPDES permit compliance for discharge from construction activities disturbing one or more acres of soil.

In some cases the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue WDRs under the Porter-Cologne Act that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

The Porter-Cologne Act also requires each of the nine RWQCBs throughout the state to adopt a Water Quality Control Plan or Basin Plan. Each Basin Plan designates beneficial uses for water resources within the basin,

establishes water quality objectives, contains programs designed to achieve water quality objectives, and references plans and policies adopted by the SWRCB. Each RWQCB is responsible for establishing water quality objectives that will afford reasonable protections to the beneficial uses and prevent nuisances to water resources within its jurisdictional area. The Porter-Cologne Act allows for some flexibility in changes to water quality provided the beneficial uses are not adversely affected.

Mormon Slough is located within the Central Valley RWQCB's Sacramento-San Joaquin River Basin planning area and is covered by the Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Central Valley RWQCB 2011).

The SWRCB adjudicates water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWCQBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

Natural Pollution Discharge Elimination System Program Construction General Permit

The Construction General Permit (CGP) (Order No. 2009-009-DWQ, as amended by 2010-0014-DWG), adopted on November 16, 2010, became effective on February 14, 2011. The permit regulates storm water discharges from construction sites which result in a Disturbed Soil Area of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. For all projects subject to the CGP, applicants are required to develop and implement an effective SWPPP.

By law, all storm water discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least one acre must comply with the provisions of the CGP. Construction activity that results in soil disturbances of less than one acre is subject to this CGP if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop SWPPPs; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the CGP.

3.12.3 Regional and Local Requirements

Drainage and Flood Control Improvements

Improvements to drainages and flood control structures are subject to review and approval by the San Joaquin County Flood Control and Water Conservation District. This agency, which is staffed by the San Joaquin County Department of Public Works, is responsible for overseeing the construction, operation, and maintenance of flood control, water supply, drainage, and groundwater recharge projects within San Joaquin County. Accordingly, the Proposed Project is subject to review and approval by the County. Methods for reducing impacts associated with storm water runoff from project features (e.g., soils disturbed during construction) have been incorporated into the project design.

3.12.4 Environmental Effects

No Action Alternative

Under this alternative, no action would be taken to halt erosion within the levee at the proposed project site and erosion would continue. Should erosion persist, emergency measures could be of a nature that limits the ability for BMPs, site mitigation, and other measures that would minimize impacts on hydrology and water quality.

Proposed Project

Within the study area, the Proposed Project would replace Mormon Slough's earthen and sediment substrate with RSP to realign the channel and arrest scour and channel degradation. The Proposed Project is designed to reduce erosional scour and, therefore, is expected to reduce turbidity within the slough. During construction, earthmoving activities within the slough could cause a short-term increase in turbidity without proper BMPs. Stream currents in the study area would likely be altered by the project, resulting in minor changes to accretion patterns. The Proposed Project would not permanently affect circulation, drainage patterns, flow, volume, rate, depth, or seasonal changes. The Proposed Project would remove areas of riparian vegetation that might serve as an erosion buffers, however, this area will be replaced by project features, such as, RSP to control erosion. Construction activities could temporarily increase the potential for oil, grease, or chemical pollutants to enter the groundwater, if equipment fail.

Mormon Slough will continue to operate as it was designed. There are no long-term plans for maintenance, thus no long-term impacts anticipated. The hydraulic impact analysis attached **as Appendix F** identified that the post-project WSELs remains below the 1965 USACE design WSELs throughout the project reach and the insignificant rise in WSELs compared to the existing WSELs due to the project has no impact on the design freeboard.

3.12.5 Mitigation

The following measures are recommended to minimize short-term construction and long-term operational water quality impacts associated with implementation of the project:

WQ-1 As one (1) or more acres of soil will be disturbed, the project is required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity Construction General Permit Order 2009-0009-DWQ.

WQ-2 Erosion control measures shall be implemented during construction of the Proposed Project. These measures shall include the preparation of a SWPPP, which describes and illustrates placement of BMPs within the project site.

Erosion control measures to be included in the SWPPP or otherwise implemented by the County include the following:

- To the extent practicable, activities that increase the erosion potential shall be restricted to the relatively dry summer and early fall period to minimize the potential for rainfall events to transport sediment to surface water features. If these activities must take place during the late fall, winter, or spring, then temporary erosion and sediment control structures shall be in place and operational at the end of each construction day and shall be maintained until permanent erosion control structures are in place.
- Vegetation clearing and ground disturbing activity shall be limited to the minimum area necessary for project implementation.

- Areas where woody vegetation needs to be removed shall be identified in advance of ground disturbance and shall be limited to only those areas that have been approved by the County. Within 10 days of completion of construction in those areas, weed-free mulch shall be applied to disturbed areas to reduce the potential for short-term erosion. Prior to a rain event, or when there is a greater than 50 percent possibility of rain within the next 24 hours, as forecasted by the National Weather Service, weed-free mulch shall be applied to all exposed areas at the completion of the day's activities. Soils shall not be left exposed during the rainy season.
- Suitable BMPs, such as silt fences, straw wattles, or catch basins, shall be placed below all construction activities at the edge of surface water features to intercept sediment before it reaches the waterway. These structures shall be installed prior to any clearing or grading activities.
- If spoil sites are used, they shall be sited such that they do not drain directly into a surface water feature, if possible. If a spoil site drains into a surface water feature, catch basins shall be constructed to intercept sediment before it reaches the feature. Spoil sites shall be graded and vegetated to reduce the potential for erosion.
- Sediment control measures shall be in place prior to the onset of the rainy season and shall be monitored and maintained in good working condition until disturbed areas have been revegetated.

WQ-3 Construction specifications shall include the following measures to minimize the potential for adverse effects resulting from accidental spills of pollutants (e.g., fuel, oil, grease):

- A site-specific spill prevention plan shall be implemented for potentially hazardous materials. The plan shall include the proper handling and storage of all potentially hazardous materials, as well as the proper procedures for cleaning up and reporting any spills. If necessary, containment berms shall be constructed to prevent spilled materials from reaching surface water features.
- Equipment and hazardous materials shall be stored a minimum of 50 feet away from surface water features.
- Vehicles and equipment used during construction shall receive proper and timely maintenance to reduce the potential for mechanical breakdowns leading to a spill of materials. Maintenance and fueling shall be conducted in an area at least 50 feet away from surface water features or within an adequate fueling containment area.

3.13 Noise

Noise impacts are analyzed on the basis of sound. *Sound* is a vibratory disturbance, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone. For the purposes of this analysis, *noise* is a sound that is loud, unpleasant, unexpected, or otherwise undesirable.

Several measurements are used to quantify sound. Measurements used in this discussion are briefly defined below.

- ***Decibel (dB):*** A unitless measure of sound that describes the logarithmic ratio of a measured sound pressure level to a reference sound pressure level of 20 micropascals.

- ***A-Weighted Decibel (dBA):*** An overall frequency-weighted sound level that approximates the frequency response of the human ear.
- ***Maximum Noise Level (L_{max}):*** The maximum instantaneous noise level during a specific period of time. The L_{max} may also be referred to as the "peak (noise) level."
- ***Equivalent Noise Level (L_{eq}):*** The instantaneous noise levels during a specific period of time in dBA are converted to relative energy values. From the sum of the relative energy values, an average energy value is calculated, which is then converted back to dBA to determine the L_{eq}.
- ***Day-Night Noise Level (L_{dn}):*** The 24-hour L_{eq} with a 10 dBA "penalty" for the noise-sensitive hours between 10 p.m. and 6 a.m. The L_{dn} attempts to account for the fact that noise during this specific period of time is a potential source of disturbance with respect to normal sleeping hours.
- ***Community Noise Equivalent Level (CNEL):*** The CNEL is similar to the L_{dn} described above, but with an additional 4.77 dBA "penalty" for the noise-sensitive hours between 7 p.m. to 10 p.m., which are typically reserved for relaxation, conversation, reading, and television. If using the same 24-hour noise data, the CNEL is typically approximately 0.5 dBA higher than the L_{dn}.
- ***Single Event Noise Level (SEL):*** The SEL describes a receiver's cumulative noise exposure from a single impulsive noise event, which is defined as an acoustical event of short duration (0.5 seconds) and involves a change in sound pressure above some reference value (approximately 40 dB).

Sound travels uniformly outward from a point source in a spherical pattern with an attenuation rate of six dBA/DD (doubling of distance). As sound (noise) propagates from the source to the receptor, the attenuation is dependent upon such factors as surface characteristics, atmospheric conditions, and the presence of physical barriers. From a line source (such as a road) sound travels uniformly outward in a cylindrical pattern with an attenuation rate of three dBA/DD. Surface characteristics between the source and receptor may result in additional sound absorption and/or reflection.

Table 17: Noise CEQA Checklist

CEQA Checklist: Noise	Potentially Significant Impact	Less-than-significant Impact with Mitigation Incorporated	Less-than-significant Impact	No Impact
Would the project:				
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,	☐	☐	☐	☒

CEQA Checklist: Noise	Potentially Significant Impact	Less-than-significant Impact with Mitigation Incorporated	Less-than-significant Impact	No Impact
where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				

3.13.1 Environmental Setting

The existing noise levels on the repair sites have primarily been characterized based on the relative intensity of activity in the surrounding areas including noise generated by agricultural equipment, as well as from vehicle traffic. These noise levels are all consistent with the current agricultural and public facility uses in the project area.

3.13.2 Regulatory Setting

Federal and State Laws and Regulations Code of Federal Regulations

Federal regulations establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under part 205 subpart B of the CFR. The federal truck pass-by noise standard is 80 dB at 15 meters from the vehicle pathway center line.

California Code of Regulations

The state of California establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the state pass-by standard is consistent with the federal limit of 80 dB. The state pass-by standard for light trucks and passenger cars (less than 4.5 tons, gross vehicle rating) is also 80 dB at 15 meters from the centerline. These standards are implemented through controls on vehicle manufacturers and by legal sanctions of vehicles operators by state and local law enforcement officials.

California Health and Safety Code

The Noise Control Act, Division 28 of the CHSC, is based upon the understanding that all Californians are entitled to a peaceful and quiet environment, free from the intrusion of noise which may be hazardous to their health or welfare. The act established an office to develop criteria and otherwise aid local agencies in preparing noise elements (State of California 1973).

Local Laws and Regulations

San Joaquin County General Plan Section 3 – Public Health and Safety

San Joaquin County developed noise level standards to quantify noise impacts in the County, and address ways to reduce or eliminate existing and future conflicts between land uses and annoying or unhealthy noise. Additional policies are in place to address ways to reduce or eliminate existing and future conflicts between land uses and noise.

3.13.3 Environmental Effects

No Action Alternative

The No Action alternative would not affect ambient sound levels on the levee or conflict with any noise ordinance, plan, or regulation. The current erosion processes would continue, and it is possible that the existing slough could be degraded to the point that emergency repairs would be warranted. Noise levels under such emergency repairs would not be constrained to normal construction hours, which would result in greater noise disturbance than under more controlled circumstances.

Proposed Project

Trucking routes would be designed to avoid residential areas and would occur primarily on roadways already used for trucking. The equipment required to complete the proposed project including; bulldozers, heavy trucks, loaders, excavators, and backhoes, generally generate peak noise levels around 80 dB at a reference distance of 50 feet. Noise produced by these activities would be reduced over distance at an average rate of about six dB/DD. It is possible that construction activities could expose persons nearby to noise levels in excess of established local standards, and result in increases in ambient noise levels or vibration above those noise levels existing in the vicinity. However, given that noise and vibration would be limited to daytime hours and would not subject residents to prolonged noise exposure above 55 to 65 dB (occasionally peaking at 65 dB) or severe noise levels above 80 dB, the proposed action would not significantly impact established communities. Therefore, traffic-related noise would be minimal. Upon project completion the proposed project would not contribute to the community noise level and the noise environment in the vicinity would be restored to pre-construction levels.

3.13.4 Mitigation

To reduce potential noise-related effects on the area surrounding the project, the contractor shall use construction BMPs. To the extent feasible, the contractor will use newer construction equipment or retrofit older equipment to make it as unobtrusive as possible (i.e. adding mufflers on engines). In addition, construction timing or sequencing shall be adjusted to avoid sensitive times of the day, and noise producing operations shall be combined to occur in the same time period. Monday through Saturday, construction activities (including equipment warm- up) shall be limited to daylight hours, but not earlier that 7:00 a.m. and not later than 6:00 p.m. On Sunday, construction timing will be similarly limited to daylight hours and between 9:00 a.m. and 6:00 p.m. Vehicle trips related to the project may occur both one hour prior to and one hour after the established construction times.

3.14 Transportation

The traffic impacts associated with repair of the proposed project will be limited to the construction phase of the project, as there will not be any permanent changes to roadways in the area of the sites, and the repairs will not be associated with any operational traffic. This analysis describes the potential haul routes that would be used to transport construction materials and the potential for project related traffic to exceed the capacity of these thoroughfares.

Table 18: Transportation CEQA Checklist

CEQA Checklist: Transportation	Potentially Significant Impact	Less-than-significant Impact with Mitigation	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?	☐	☐	☐	☒

3.14.1 Environmental Setting

Personnel, equipment, and imported materials would reach the proposed work area primarily via State Route 26 and Escalon Bellota Road. Access to various areas of the site would be along temporary and existing access roads. The construction labor force is estimated to include workers commuting in pick-up trucks daily, over the 150-day construction period, commuting from Stockton or one of the surrounding communities (round trip distance of about 50 miles). Material is likely to be sourced locally from on-site or nearby local quarries including sources in or around Stockton. As such round-trip distances for haul trucks will be similar to the distance workers commute and will likely be about 50 miles. Other equipment mobilized to the site may include backhoes or excavators, semi-trucks with transfer trailers, and/or dump trucks among other equipment. Major equipment likely to be used on this job is listed in the traffic memorandum in **Appendix G**.

The total quantity of material for the project as previously noted is anticipated to include about 25,500 CY of import and about 500 CY of exported material. Daily truck trips are anticipated on the order of 2,500 truck trips or an average of about 20 truck trips per day. These values are approximate and will vary day to day over the life of the project depending on various construction constraints.

Generally, construction traffic will be staged out of the North Staging Area and will travel via public roads to and from the work areas located along each side of the Mormon Slough. A secondary South Staging Area is located on the south side of the Slough to help reduce traffic loads and by providing temporary staging for construction equipment and traffic. Construction traffic may also access the construction areas directly via State Route 26 or Escalon Bellota Road. The contractor is required to obtain all necessary permits and to submit a traffic control plan to the County providing details to facilitate traffic safety while constructing the project. Project Specifications require that Traffic control devices and plans are to generally conform with the requirements of the California Manual on Uniform Traffic Control Devices (MUTCD) and to be signed and stamped by a civil

engineer licensed in California. On-site, heavy construction traffic will primarily be limited to locations designated on the project plans.

3.14.2 Regulatory Setting

Federal Policies and Regulations

Federal Highway Administration Manual on Uniform Traffic Control Devices

The Federal Highway Administration's (FHWA) MUTCD is a compilation of national standards for all traffic control devices, including road markings, highway signs, and traffic signals. This document, which has been administered by FHWA since 1971, is updated periodically to accommodate the nation's evolving transportation needs and addresses new safety technologies, traffic control tools and traffic management techniques. The most current version of the MUTCD is dated 2009 and was published in the Federal Register (FR) on June 13, 2012 (FHWA, 2014).

State Policies and Regulations

Caltrans Transportation Management Plan Guidelines

Caltrans Transportation Management Plan Guidelines (2009) outlines strategies and guidelines that are needed to minimize traffic congestion during road work activities that are planned along existing Caltrans facilities. The guidelines established in this document identify processes, roles, and responsibilities for all planned construction, maintenance, and permit activities. Incorporation of these strategies in project construction documents and implementation of the strategies are expected to help reduce congestion and manage traffic impacts near work areas.

3.14.3 Environmental Effects

No Action Alternative

With this alternative no work would be conducted therefore eliminating any additional traffic to the project area. However, undermining of private property along the south (left bank) and encroachment near Highway 26 and the existing levee on the north (right bank) would persist. Eventually, emergency repair measures would likely need to be implemented to protect the slough and levee system.

Proposed Project

The temporary nature of construction, in addition to the relatively small number of daily trips, is not anticipated to degrade traffic below the acceptable vehicle miles traveled threshold of significance. The Proposed Project does not include any new construction or realignment of existing road facilities, and instruction would be provided to construction workers about designated construction staging areas where they can park. See **Appendix G** for traffic details. Traffic from construction equipment or construction worker vehicles would not be expected to interfere with emergency vehicle access. Therefore, impacts would be less than significant.

3.15 Tribal Cultural Resources

Table 19: Tribal Cultural Resources CEQA Checklist

CEQA Checklist: Tribal Cultural Resources	Potentially Significant Impact	Less-than-significant Impact with Mitigation Incorporated	Less-than-significant Impact	No Impact
Would the project:				
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:	☐	☒	☐	☐
b. 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 section5020.1(k), or	☐	☐	☒	☐
c. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

3.15.1 Environmental Setting

The Proposed Project Site is located near the northeastern boundary of the Northern Valley Yokuts and the southern boundary of the Eastern Miwok ethnographic territories. The Northern Valley Yokuts territory spanned from the crest of the Diablo Range on the west and the foothills of the Sierra Nevada mountain range on the east. The nearest Miwok villages were located north of the APE, along the southern bank of the Mokelumne River.

3.15.2 Environmental Effects

No Action Alternative

With the no action alternative, no work would be conducted. Therefore, the possibility of uncovering cultural resources would be eliminated. However, undermining of private property along the south (left bank) and encroachment near Highway 26 and the existing levee on the north (right bank) would persist. Continued erosion could lead to the destruction of any undiscovered artifacts within and around the proposed project area. Therefore, the No Action Alternative could result in significant effects on tribal cultural resources.

Proposed Project

No tribal cultural resources have been observed on site or and thus no tribal historical resources exist that are eligible for listing in the California Register of Historical Resources, or in a local register of historical resources. Although known tribal cultural resources are not expected to be affected by grading or construction activities for the Proposed Project, unknown and previously unidentified tribal cultural resources may be uncovered during Proposed Project construction.

In accordance with PRC § 5097.91-5097-94, the Native American Heritage Commission (NAHC) maintains a catalog pertaining to places of special religious or social significance to Native Americans. In order to identify if places of religious or social significance exist within the APE, Parus contacted the NAHC on January 07, 2020 to request a review of their Sacred Lands Files. The NAHC responded by email on January 08, 2020, stating that the Sacred Lands File search was negative and provided a list of individuals to be contacted regarding the project. PRC § 21080.3.1, subd. (b), declares that California Native American Tribes traditionally and culturally affiliated with a geographic area may have expertise concerning their tribal cultural resources. As such, Parus contacted persons on the designated contact list maintained by the NAHC, providing each with a project description, location map, a request to respond to Parus with any relevant information, and a request to respond to the Lead Agency within 30 days, should the tribe wish to engage in formal government-to-government Consultation. Email or hard-copy notifications were sent to all parties on the NAHC list on January 16th, 2020. Records pertaining to formal consultation are on file with the Lead Agency.

3.15.3 Mitigation

With the implementation of these mitigation measures, the Cultural Resources Technical Report concludes a **Finding of No Adverse Impacts with Conditions** or changes to any cultural, tribal, or historical resources within the APE, for the purposes of CEQA.

1. **CUL-1:** ESAs shall be delineated to protect against inadvertent adverse effects to potential historic properties.
2. **CUL-2:** A SOI qualified prehistoric archaeological monitor shall be present for all ground disturbing work (including grubbing) in culturally designated areas.
3. **CUL-3:** A Late Discovery Plan shall be drafted and signed by all stakeholders (TBD) prior to the start of construction.
4. **CUL-4:** Areas within the project APE designated as ESAs shall be delineated with construction fencing prior to the start of construction and monitored periodically, per the Late Discovery Plan.
5. **CUL-5:** If human remains are encountered during construction, it is required that work stop immediately in that area and notification be made to the San Joaquin County Sheriff's Coroner's Division (CCR 15064.5(e) (1) (A); HSC Sec.7050.5).
    a. Contact information for the Chief Medical Examiner at the time of this report: San Joaquin County Sherriff's Coroner's Division; Dr. Michael Hunter– Chief Medical Examiner 7000 Michael N. Canlis Blvd. French Camp, CA 95231; Phone: (209) 468-4300 Email: mhunter@sjgov.org. If the coroner determines the remains to Native American, the Coroner shall

contact the NAHC within 24 hours and collaboratively determine the Most Likely Descendant (CCR 15064.5(e)(1)(B).

3.16 Mandatory Findings of Significance

Table 20: Mandatory Findings of Significance CEQA Checklist

CEQA Checklist: Mandatory Findings of Significance	Potentially Significant Impact	Less-than-significant Impact with Mitigation Incorporated	Less-than-significant Impact	No Impact
Would the project:				
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?	☐	☒	☐	☐

3.16.1 Findings

This IS/EA evaluated the potential environmental effects of the proposed project consisting of restoration and protection along a section of channel banks of Mormon Slough for erosion and flood system repair. Potential adverse effects to the following resources were evaluated in detail: aesthetics/visual resource; air quality; cultural resources; energy; wildlife, fish and vegetation resource; special status species; hydrology and water quality; geology and soils; greenhouse gas; hazards and hazardous materials; noise; transportation; and tribal cultural resources.

Results of the IS/EA, field visits, and coordination with other agencies indicate that the proposed project would have no significant long-term effects on environmental resources. Short-term effects during construction would either be less than significant or mitigated to less than significant using best management practices.

Based on the information presented in the IS/EA, the proposed project would have a less than significant adverse effect on the quality of human environment, and the mitigation measures proposed in the IS/EA are sufficient to reduce effects to less-than-significant levels.

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5.0 APPENDICES

5.1 Appendix A: Construction Plans

5.2 Appendix B: Air Quality Technical Memorandum

5.3 Appendix C: Biological Assessment

5.4 Appendix D: Biological Resource Assessment

5.5 Appendix E: Cultural Resources Technical Inventory Report (*upon request)*

5.6 Appendix F: Hydraulic Impacts Analysis Technical Memorandum

5.7 Appendix G: Traffic Memorandum