# Initial Study with Intent to Adopt a Negative Declaration

## Ecosystem Restoration and Floodwater Attenuation (ERFA) Project on the West Unit of the San Joaquin River National Wildlife Refuge

*a component of the "Three Amigos Non-Structural Alternative Flood Management Project"*

**November, 2015**


Prepared by:
California Department of Water Resources
Flood Projects Office
3464 El Camino Avenue Room 200
Sacramento, CA 95821

and

River Partners
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Chico, CA 95926

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# INITIAL STUDY with INTENT to ADOPT a NEGATIVE DECLARATION

The Department of Water Resources (DWR) and River Partners have prepared this Initial Study (IS) and intends to adopt the proposed Negative Declaration (ND) for the Ecosystem Restoration and Floodwater Attenuation (ERFA) Project in compliance with the California Environmental Quality Act (CEQA).

**Project Title:** Ecosystem Restoration and Floodwater Attenuation (ERFA) Project

**Lead Agency:** DWR

**Project Location:** The proposed project is located on the San Joaquin River National Wildlife Refuge in Stanislaus County in California's Central Valley, approximately 9 miles west of Modesto.

**Project Description:** DWR proposes to install two gated pipes (72-inch pipes fitted with manually-operated slide gates) and replace 1-36 inch pipe through an existing levee on San Joaquin River National Wildlife Refuge (Refuge). The proposed Project will provide improved river-floodplain connectivity for over 2,500 acres of restored floodplain habitat along the west side of the San Joaquin River between its confluence with the Tuolumne River and Highway 132. This action will promote inflow and drainage that preserves and supports wildlife habitat values at the Refuge.

**Public Review Period:** The IS/ND is being circulated for public review and comment for a period of 30 days starting on November 12, 2015. Written comments must be received no later than the close of business (5:00pm) on December 12, 2015. Comments should be emailed to David.Martasian@water.ca.gov or mailed to:

David Martasian
Department of Water Resources
Flood Projects Office
3464 El Camino Ave., Rm 200
Sacramento, CA 95821

**Copies of this Negative Declaration and Initial Study are available at:**

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Modesto, CA 9535

Stanislaus County Library
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Modesto, CA 95354

**Online at:**
http://www.water.ca.gov/floodmgmt/fpo/sgb/fpcp/prop84/comp_sol/2008_selections/alist_projects/

# PROPOSED NEGATIVE DECLARATION

**Project Title:** Ecosystem Restoration and Floodwater Attenuation (ERFA) Project

**Lead Agency:** Department of Water Resources (DWR)

**Project Location:** The proposed project is located on the San Joaquin River National Wildlife Refuge in Stanislaus County in California's Central Valley, approximately 9 miles west of Modesto.

**Project Description:** DWR proposes to install two gated pipes (72-inch pipes fitted with manually-operated slide gates) and replace 1-36 inch pipe through an existing levee on San Joaquin River National Wildlife Refuge (Refuge). The proposed Project will provide improved river-floodplain connectivity for over 2,500 acres of restored floodplain habitat along the west side of the San Joaquin River between its confluence with the Tuolumne River and Highway 132. This action will promote inflow and drainage that preserves and supports wildlife habitat values at the Refuge.

**Findings:** Based on the Initial Study (IS), it has been determined that the proposed project would not have any significant effects on the environment because potential impacts result in less-than-significant or no impact determinations. Best Management Practices (BMPs), avoidance and minimization measures would be implemented to avoid any potential effects on the environment. This conclusion is supported by the following findings:

1. The proposed project would not impact the following CEQA Appendix G environmental factors:
    a. Aesthetics
    b. Agriculture and Forestry Resources
    c. Biological Resources
    d. Cultural Resources
    e. Geology and Soils
    f. Hazards and Hazardous Waste
    g. Land Use Planning
    h. Mineral Resources
    i. Noise
    j. Population and Housing
    k. Public Services
    l. Recreation
    m. Transportation and Traffic
    n. Utilities and Service Systems
2. The proposed project would have a less-than-significant impact to the following CEQA Appendix G environmental factors:
    a. Air Quality
    b. Greenhouse Gas Emission
    c. Hydrology and Water Quality

**Avoidance and Minimization Measures**

To avoid or minimize propose project-related effects and enhance the environmental quality of the project area, River Partners and its contractors will implement the following environmental commitments. These measures will be implemented at a site-specific level, as appropriate. The identified measures include:

- All installation and maintenance work will avoid existing established riparian vegetation to the extent possible to minimize vegetation impacts.
- No ground disturbing work will occur within the active channel of the San Joaquin River.
- Surface disturbance of soil and vegetation will be kept to a minimum.
- Existing access and maintenance roads will be used.
- Earthmoving will occur in the fall (low precipitation) months to reduce the likelihood of soil erosion or sediment discharge.
- Earthwork operations will be suspended when winds exceed 20 miles per hour.
- Any stockpiled soil would be placed in upland areas and sloped so that it will not be subject to accelerated erosion.
- River Partners will comply with all applicable statutory herbicide application and notification regulations.
- Pre-construction wildlife surveys will be conducted by a qualified biologist prior to ground disturbing activities. If sensitive species are found at the Project Area or vicinity, River Partners will consult with U.S. Fish and Wildlife Service (USFWS) and/or California Department of Fish and Wildlife (CDFW) for appropriate avoidance or mitigation measures.
- If historical or unique archaeological resources are accidentally discovered during Project activities, all work would temporarily cease in the immediate area until the findings can be assessed by a qualified archaeologist and an appropriate course of action can be determined. If the find is found to be an historical or unique archaeological resource, time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation must be available (Cal. Code Regs.,tit.14, §15064.5, subd. (f)).
- If human remains are found, such remains would be subject to the provisions of Health and Safety Code section 7050.5(b). The requirements and procedures would be implemented, including immediately stopping work in the vicinity of the find and notifying the County Coroner. A DWR archaeologist would also need to be contacted immediately. If the remains are determined to be those of a Native American, the process for notification of the California Native American Heritage Commission (NAHC) and consultation with the individual(s) identified by the NAHC as the “most likely descendent” is set forth in Public Resources Code section 5097.98. Work in the vicinity of the find can restart after the remains have been investigated and appropriate recommendations have been made for their treatment and disposition.
- Following flood events, USFWS personnel will investigate for potential exposure of archeological resources. If historical or unique archaeological resources are

haphazardly exposed by flooding, the findings will be assessed by a qualified archaeologist and an appropriate course of action will be determined.

- Diesel fuel and oil will be used, stored and disposed in accordance with standard protocols for handling of hazardous materials. All personnel involved in use of hazardous materials will be trained in emergency response and spill control.
- During construction activities, construction personnel will prevent oil, grease, fuels, and other petroleum products, toxic chemicals, and any other substances that could be deleterious to aquatic life from contaminating the soil and/or entering waters of the state. Construction personnel staff will immediately remove such substances from any place where they could enter waters of the state and/or adversely affect fish and wildlife resources. Construction personnel staff will attempt to contain any releases or spills of such substances, and shall report any significant spills as soon as possible to the California Emergency Management Agency (Cal-EMA). In the event of a significant spill, work will cease immediately and workers will employ containment methods if it is safe to do so. DWR will make notifications to the appropriate agencies within the regulatory time frames.

## STATEMENT OF NO SIGNIFICANT EFFECT

DWR prepared an Initial Study in support of this Negative Declaration. Copies of the Initial Study/Negative Declaration (IS/ND) were provided to the State Clearinghouse on November 13, initiating the 30-day public review period, which will end on December 13, 2015.

Pursuant to Public Resources Code section 21082, DWR has independently reviewed and analyzed the proposed project and finds that the IS/ND reflects the independent analysis and judgment of DWR. As the lead agency for the project, DWR further finds that the project avoidance and minimization measures will be implemented as stated in the ND. The proposed project will have no significant effect on the environment.

I hereby approve this project:

Eric S. Koch
Chief, Flood Projects Office
Division of Flood Management
Department of Water Resources

11/9/15
Date

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Appendix A – CEQA Initial Study Environmental Checklist
Appendix B – Project's Road Construction Emissions Model Results

## PROJECT INFORMATION

a) Project Title: Ecosystem Restoration and Floodwater Attenuation (ERFA) Project

b) Lead Agency Name and Address:
California Department of Water Resources
Flood Projects Office
3464 El Camino Avenue Room 200
Sacramento, CA 95821

c) Contact Person and Phone Number:
David Martasian
Senior Environmental Scientist
Chief, Environmental Support Section
Phone: 916-574-1440

d) Project Sponsor's Name and Address:
California Department of Water Resources
Flood Projects Office
3464 El Camino Avenue Room 200
Sacramento, CA 95821

Project Location: The proposed project is located on the San Joaquin River National Wildlife Refuge in Stanislaus County in California's Central Valley, approximately 9 miles west of Modesto.

e) General Plan Designation: Excluded – federal lands

f) Zoning: Excluded – federal lands

g) Surrounding Land Uses and Setting: Lands surrounding the Project Area are agricultural including orchards, row crops, grazing lands and dairies. The Project area includes those lands within the primary floodplain of the San Joaquin River at its confluence with the Tuolumne River.

h) Other Public Agencies Whose Approval is Required: Central Valley Flood Protection Board – Encroachment Permit

# I. INTRODUCTION

This document provides supporting information for the proposed Ecosystem Restoration and Floodwater Attenuation (ERFA) Project on the US Fish and Wildlife Service (USFWS) San Joaquin River National Wildlife Refuge (Refuge). The ERFA Project (Project) is a component of the Three Amigos Non-Structural Alternative Flood Management Project (Three Amigos Project) further described in the documents listed below. This document will analyze the potential direct and indirect impacts resulting from installing two gated drainage pipes and replacing one existing pipe on Refuge land. The Project will provide improved river-floodplain connectivity for over 2,500 acres of restored floodplain habitat along the west side of the San Joaquin River between its confluence with the Tuolumne River and Highway 132. Connectivity is currently provided through levees that breached during past flood events. The existing levee will be modified (gated pipes will be installed) to promote inflow and drainage that preserves and supports wildlife habitat values at the Refuge.

## A. Background

The flood event in January 1997 caused overtopping and breaching of levees along the San Joaquin River in the jurisdictions of Reclamation Districts (RD) 2099, 2100, and 2102, impacting over 3000 acres of farmland within and adjacent to the Project Area (Figure 3). As a result of these devastating floods, an Interagency Levee Task Force was formed and identified ‘non-structural alternatives’ to levee repair and rehabilitation for this area. A ‘non-structural alternative’ or NSA, is an alternative to repairing and/or restoring flood control features to U.S. Army Corps of Engineers (USACE) standard.

USFWS purchased the property in 1998 and incorporated it into the Refuge (a Unit of the San Luis National Wildlife Refuge Complex). Subsequent habitat restoration on these lands has been supported by state and federal agencies as well as area non-profits and is consistent with the Refuge’s Comprehensive Conservation Plan (USFWS 2006c). In total, since 2001, more than 2,000 acres of riparian forests have been replanted on these lands, and over 450 acres of seasonal and perennial wetlands have been established through minor grading. All of this habitat restoration has been designed to be consistent with the Three Amigos Project, including the establishment of drainage patterns across the site that promote wildlife values and reduce the risk of fish stranding. The final component of this habitat restoration is the installation of gated pipes, as described here, to allow floodwaters to appropriately enter and drain from the site.

In order to ensure the effectiveness of the habitat restoration, enhanced river-floodplain connectivity is necessary. The proposed ERFA project involves the installation of two drainage pipes and replacement of an existing pipe in the levee to allow floodwaters to drain more quickly off of the Refuge. USFWS and USACE had initially proposed a

larger project that would have involved breaching the levee in additional locations (USACE, 1997). Today, these additional breach locations are not being proposed.

The Three Amigos Project is supported administratively and financially by the USFWS, USACE, United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), US Bureau of Reclamation (USBR), California Department of Fish and Wildlife (CDFW), California Department of Water Resources (DWR), and CVFPB.

### B. Prior Supporting Documentation

The following federal environmental documentation supports the NSA:

July 1997. US Army Corps of Engineers. Executive Summary – Nonstructural Plans for Reclamation Districts 2099/2100/2102.

October 1997. US Army Corps of Engineers. PL84-99 Nonstructural Alternative Hydrological Impact Analysis San Joaquin River Sub-basins 12 and 13 – Reclamation Districts 2099, 2100, and 2102.

February 1998. US Army Corps of Engineers, US Fish and Wildlife Service, Reclamation Board of the State of California. Preliminary Agreements regarding the Nonstructural Alternative to Structural Repairs resulting from the January 1997 flood damage to Project levees for Reclamation Districts 2099, 2100, and 2102.

September 1998. US Army Corps of Engineers. PL84-99 Nonstructural Alternative to Structural Rehabilitation of Levees, San Joaquin River Sub-basins 12 and 13 – Reclamation Districts 2099, 2100, and 2102 (Hydraulic Analysis).

July 28, 1997. US Army Corps of Engineers. Environmental Assessment / Finding of No Significant Impact for the PL84-99 Levee Rehabilitation Reclamation District 2099 San Joaquin River Basin Stanislaus County, California.

July 28, 1997. US Army Corps of Engineers. Environmental Assessment / Finding of No Significant Impact for the PL84-99 Levee Rehabilitation Reclamation Districts 2100 & 2102 San Joaquin River Basin Stanislaus County, California.

June 2000. US Army Corps of Engineers, US Fish and Wildlife Service. Memorandum of Agreement between the Department of the Army and the United States Fish and Wildlife Service for Implementation of Nonstructural Alternative to the Repair or Restoration of Levees for Reclamation Districts 2099, 2100, and 2102.

### C. Project Purpose

For purposes of this analysis, the Project Area is defined as the entire USFWS Refuge Complex and the Action Area is defined by the levee section where the 3 drainage pipes will be installed. The Action Area is located within the Project Area. The Project will install gated pipes at the downstream end of the Project Area to support river-floodplain connectivity. Gated pipes will promote transient floodwater storage, alleviating potential flood damage in the region while simultaneously minimizing fish entrapment hazard.

In 2006, a flood event breached the north and south berms on the WSID Main Intake Canal allowing floodwater to enter the Refuge's West Unit in both the Hagemann and Lara Tracts (Figure 2). The 1,535-acre Hagemann Tract is currently drained through a 36-inch pipe at the lower, northern end of the tract. This pipe is small, relative to the amount of water that accumulates behind it. When the property was farmed, a pump was used to release floodwaters from behind the levee in the same location as the 36-inch drain pipe.

Drainage of the site after the 2006 flood event took four months. This poses several risks to migratory fish and adjacent farmers. The first risk is that the small pipe does not provide enough flow velocity to signal the fish where or how to exit the ponded water. The second risk is that over the course of four months, water temperatures behind the levee can become lethal to salmonids. Finally, the risk to farmers is that floodwaters seep into adjacent farmlands causing damage to the root zone of crops, and impede drainage of upstream fields through Hospital Creek and other drainage canals that cross the Refuge.

Subsequently, River Partners applied for funding through DWR's competitive grant program, the Flood Projects Office Flood Protection Corridor Program (FPCP). DWR funded River Partners through grant agreement SAP 4600009040 to design and implement the Project. DWR is the CEQA lead agency and the CVFPB is a responsible agency.

### 1. Project Objectives

Proposed Project objectives are to:

- Reduce the damage to restored habitat areas and adjacent lands associated with hindered floodwater drainage from the site;
- Permanently provide over 1,535 acres of floodwater attenuation opportunity by alleviating endangered species management concerns related to poor drainage from the site;
- Provide an off main-channel sediment deposition site during overbank flows;
- Reduce the risk of fish entrapment on floodplains during overbank flows; and
- Increase groundwater recharge potential at the site.
-

### 2. Project Analyses and Plans

***Hydraulic Analysis -*** Since 1997, several hydraulic analyses have been developed in support of the NSA, its anticipated effects on wildlife habitat values, and its anticipated effects on flood management. USACE provided hydraulic analysis in 1998 (referenced above) and re-approved the findings of that report in 2015. Investigations performed by Phillip Williams and Associates (PWA) (now, Environmental Science Associates (ESA) provided guidance for habitat restoration actions that have been undertaken since 2001 to promote wildlife habitat values across the Refuge. The following additional studies have been developed to describe alternative Project configurations and their effects on the surrounding flood system, and environment:

PWA. 2000. San Joaquin River National Wildlife Refuge Phase 1: Analysis of Proposed Levee Breaches; Prepared for Ducks Unlimited and the US Fish and Wildlife Service Anadromous Fish Restoration Program. PWA ref #1486

PWA. 2004. San Joaquin River National Wildlife Refuge Phase 2: Habitat Implications of Levee Breach Alternatives; Prepared for Ducks Unlimited and the US Fish and Wildlife Service Anadromous Fish Restoration Program. PWA ref #1568.00

ESA PWA. 2014. Ecosystem Restoration and Floodwater Attenuation at the San Joaquin River National Wildlife Refuge Workplan; prepared for River Partners.

ESA PWA. 2014. Ecosystem Restoration and Floodwater Attenuation at the San Joaquin River National Wildlife Refuge, Preliminary Hydrodynamic Modelling; Prepared for River Partners.

ESA PWA. 2015. Ecosystem Restoration and Floodwater Attenuation at the San Joaquin River National Wildlife Refuge, Water Control Structure Study; Prepared for River Partners.

***Habitat Restoration -*** Since 2001, River Partners, USFWS and several project partners have cooperated in the design and construction of riparian and floodplain habitat restoration across the Refuge resulting in over 2,500 acres of restored habitat areas including numerous specialty wildlife management features such as drainage swales, seasonal and perennial wetlands, elevated flood refugia for terrestrial species, forests and shrublands. All of these efforts have been guided by the hydraulic analyses described above as well as the recommendations provided by USACE regarding the Three Amigos Project. The following studies and plans have been developed to guide these habitat restoration and management efforts:

Sacramento River Partners. 2001. San Joaquin River National Wildlife Refuge, Pre-restoration Plan; Prepared for the US Fish and Wildlife Service

Sacramento River Partners. 2002. Restoration Plan for Fall 2002 (Fields H5, H6, H21, H25, and L1-L9), San Joaquin River National Wildlife Refuge; Prepared for the US Fish and Wildlife Service

Sacramento River Partners. 2002. Restoration Plan for Spring 2002 (Fields H8, H9, and H20), San Joaquin River National Wildlife Refuge; Prepared for the US Fish and Wildlife Service

US Fish and Wildlife Service. 2006. Comprehensive Conservation Plan for the San Joaquin River National Wildlife Refuge

River Partners. 2006. Restoration Plan for the Vierra Flood Protection and Environmental Enhancement Project, San Joaquin River National Wildlife Refuge; Prepared for California Department of Water Resources and the US Fish and Wildlife Service

River Partners. 2007. San Joaquin River National Wildlife Refuge, Restoration Plan for Spring 2007: Hageman 1: Fields H4, H24, H25 and H26); Prepared for California Department of Fish and Wildlife, Wildlife Conservation Board; California Natural Resources Agency – Prop 50 River Parkways Program, US Fish and Wildlife Service, and US Bureau of Reclamation – Central Valley Project Habitat Restoration Program

River Partners. 2008. Effects of Long Duration Flooding on Riparian Plant Species in Restoration Plantings, San Joaquin River National Wildlife Refuge; Prepared for US Fish and Wildlife Service

River Partners. 2008. San Joaquin River National Wildlife Refuge, Restoration Plan for Spring 2008: Hagemann 2: Fields H3 and H23); Prepared for US Fish and Wildlife Service, and US Bureau of Reclamation – Central Valley Project Habitat Restoration Program

River Partners. 2008. Restoration Plan for the Arambel Unit, San Joaquin River National Wildlife Refuge; Prepared for US Fish and Wildlife Service, and US Bureau of Reclamation – Central Valley Project Habitat Restoration Program

River Partners. 2013. Riparian Restoration Plan for the Ecosystem Restoration and Floodwater Attenuation Project (also Hagemann III Project): Hagemann and Arambel Tracts of the San Joaquin River National Wildlife Refuge; Prepared for California Department of Water Resources and US Fish and Wildlife Service

## D. Permits, Approvals and Regulatory Compliance

No portion of the Project is located within navigable waterways, however levee modification will influence the movement of floodwaters through this region, and for that reason, consultation with CVFPB and USACE is required. An encroachment permit will be obtained from CVFPB. It is not anticipated a 408 permit will be required for the Project since USACE previously analyzed impacts resulting from 'modifications to existing levees' in the Project Area in their 1997 Environmental Assessment (EA). In additional, it is not anticipated a 404 permit will be necessary since the Project does not result in discharge of dredge or fill materials into Waters of the US or wetlands. Levee modification activities proposed by this Project will not impact riparian habitat, lakebeds or streambeds protected under California Fish and Game Code. Additionally, the Project will benefit numerous state and federal threatened and endangered species.

### 1. National Environmental Policy Act (NEPA) Compliance

Levees in the Project Area breached during the 1997 floods, impacting over 3,000 acres of farmland within and adjacent to the Project Area. The USACE and CVFPB reached agreement to pursue the acquisition and restoration of the floodplain in the Project area as a NSA to structural levee repairs authorized under Public Law (PL) 84-99 in 1998. USFWS purchased the properties in 1998, and has overseen several complementary habitat restoration and floodwater attenuation projects consistent with the NSA within and adjacent to the Project Area.

The installation of pipes being proposed by the ERFA project are consistent with prior federal environmental analysis for the Project, and levee breaches are consistent with recommendations from USACE (USACE, Sept 1998).

The NEPA compliance history is provided below:

- In 1997, USACE attained 2 Findings of No Significant Impact (FONSI) under NEPA related to breaching the levees within and adjacent to the Project area.
- In 1998, USFWS attained a FONSI under NEPA to expand the Refuge Boundary and acquire the fee title to lands within the Project footprint.
- In support of the habitat restoration objectives for the Refuge in 2006 USFWS attained a FONSI under NEPA for their Comprehensive Conservation Plan for the San Joaquin River National Wildlife Refuge.
- USACE is currently updating their NEPA document to reflect changes in the protected status of several wildlife species since 1998.

### 2. California Environmental Quality Act (CEQA) Compliance

DWR is the CEQA lead agency for the Project, and the CVFPB is a responsible agency. River Partners and DWR have prepared this Initial Study (IS) and DWR intends to adopt the proposed Negative Declaration (ND) for the Project in compliance with the CEQA.

For purpose of this analysis, baseline conditions are defined as existing conditions. California Code of Regulations, title 14, section 15125 (a) defines environmental setting as conditions when environmental analysis is commenced (in the absence of an NOP). An NOP is not required for an IS/ND. The environmental analysis for the Project began in March 2015. However, the Three Amigos Project commenced in 2000. These breaches have been a part of the landscape since 1997. Therefore, the existing breaches and the location of the potential floodwaters are considered a part of the baseline conditions.

## II. PROJECT DESCRIPTION

### A. Project Setting

#### 1. Project Area Setting

The Project is located on the Refuge in Stanislaus County in California's Central Valley, approximately 9 miles west of Modesto (Figure 1). The Project Area is on the Vierra, Hagemann and Lara Tracts of the West Unit of the Refuge, located on the west bank of the San Joaquin River, River Mile 77-80L. The Refuge encompasses two confluences of the San Joaquin River: the confluence with the Tuolumne River, and the confluence with the Stanislaus River. The surrounding area is primarily a matrix of irrigated agricultural land in orchard and row crop production.

Historically, the Project Area hosted a mosaic of floodplain habitat types including floodplain lakes, wetlands, forests and grasslands (River Partners 2002, USFWS 2006). The Project Area is in the active floodplain of the San Joaquin River, and was subject to flooding often enough to preclude permanent pre-European human settlement. The Project Area was cleared and leveled for farming between 1900 and 1940, hosting row crop agriculture until it was purchased by USFWS in 1998. Since its purchase, USFWS has worked with many partners to restore wildlife habitat values to the site consistent with the mission of the National Wildlife Refuge System and further described in the Comprehensive Conservation Plan for the Refuge (USFWS 2006).

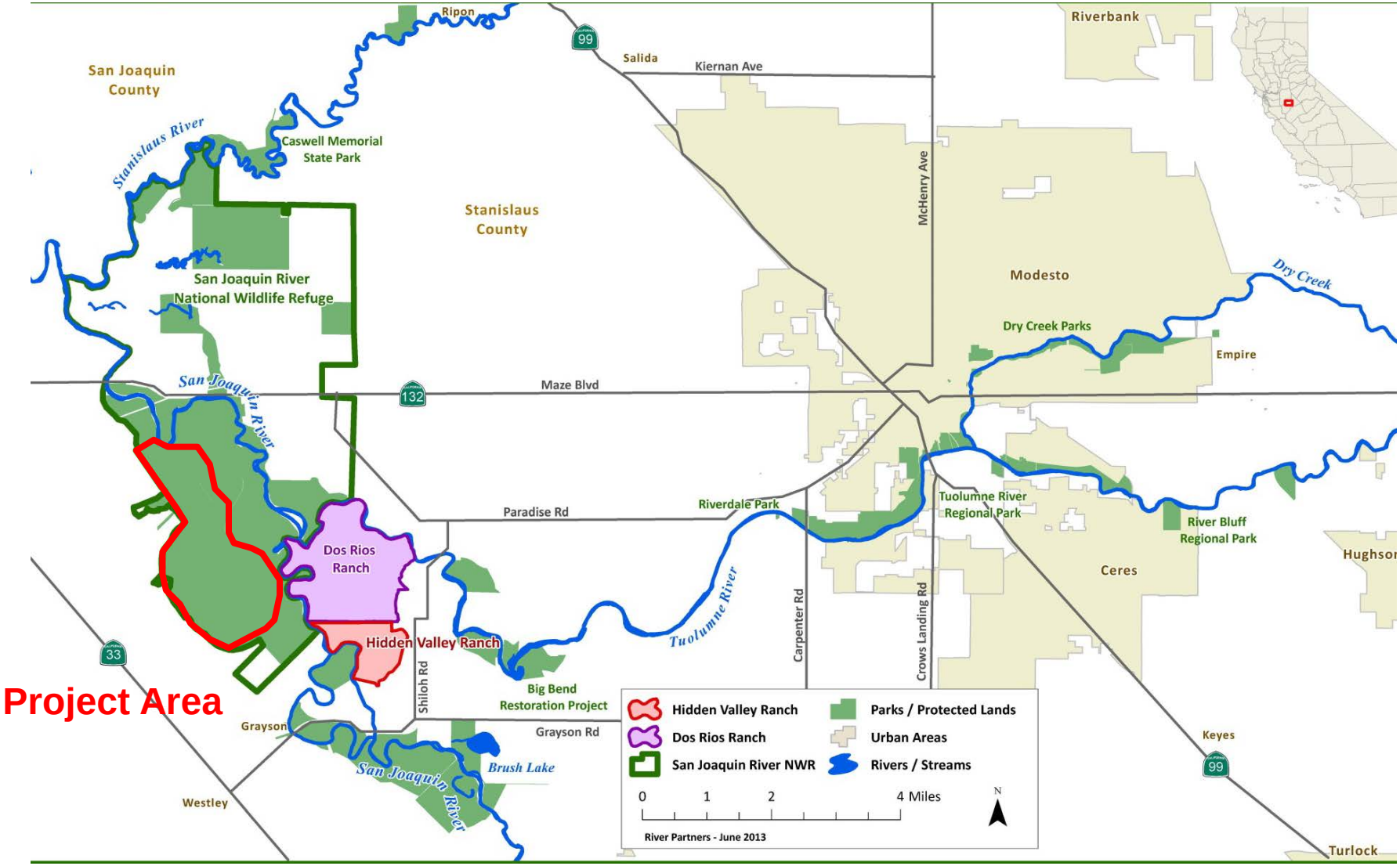


Figure 1. Regional Map, Stanislaus County, California

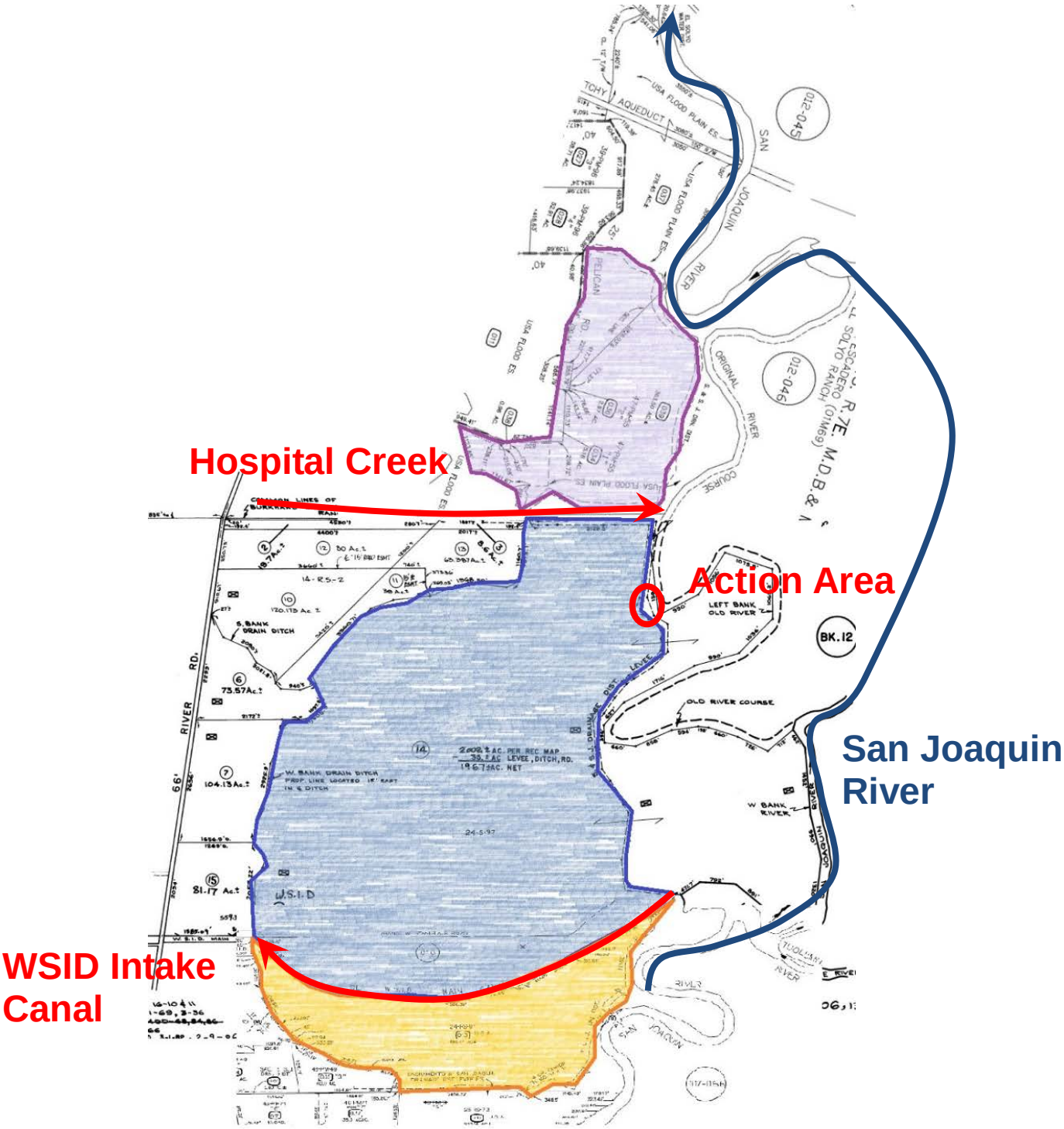


Figure 2. Project Area Parcel Map: from North to South – Reclamation District 2099 (purple, Vierra Tract), 2100 (blue, Hagemann Tract), and 2102 (orange, Lara Tract).

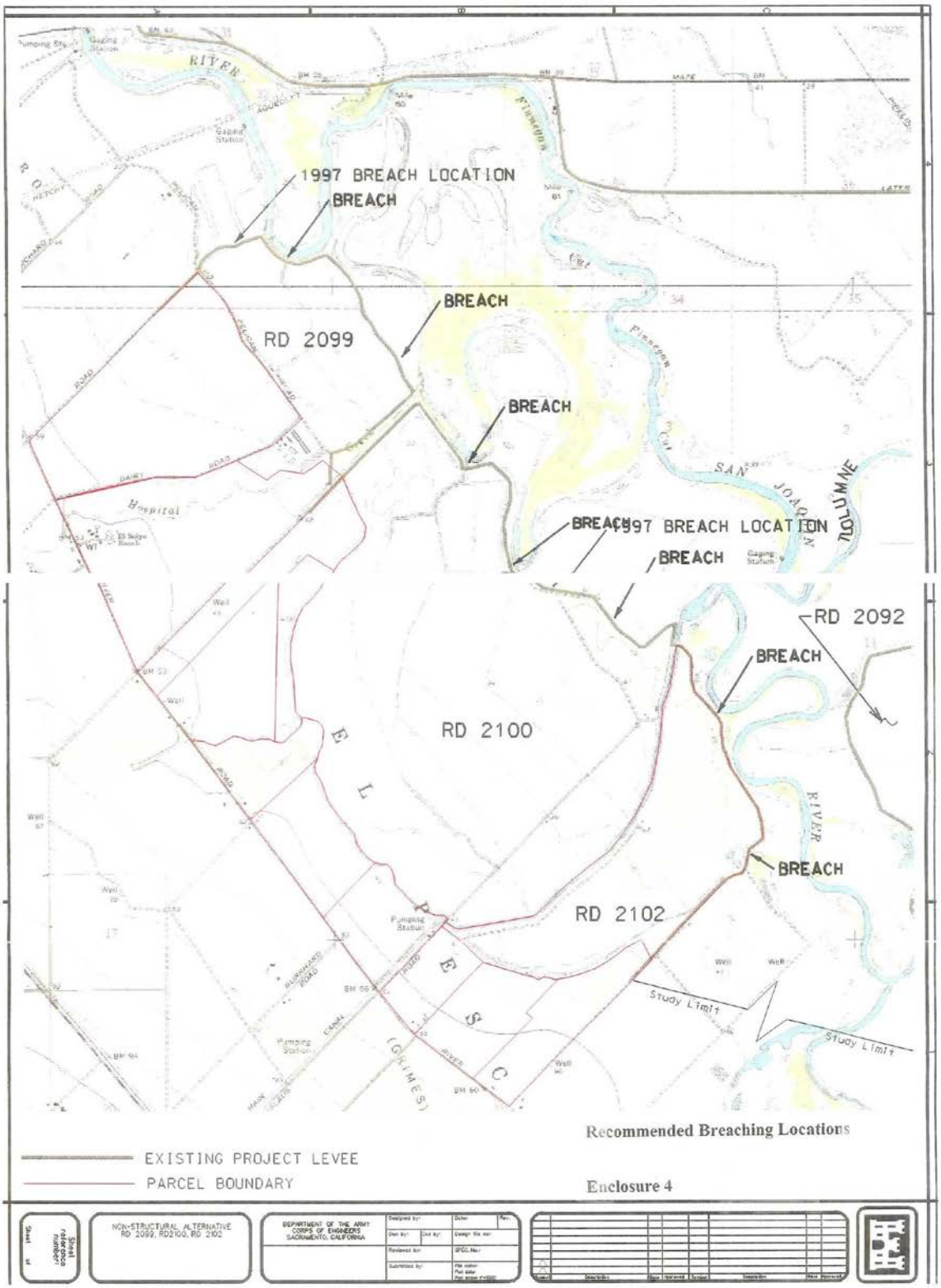


Figure 3. Existing and Recommended Levee Breaching Locations, from USACE 1998 Hydraulic Analysis

The Project Area is transected near its southern boundary by the West Stanislaus Irrigation District's (WSID) main intake canal, an approximate 2-mile intake canal which draws San Joaquin River water west across the Refuge for delivery to the WSID on the west side of the San Joaquin River (Figure 2). The WSID delivers water to over 22,000 acres of irrigated agriculture.

The Project Area is transected near its northern boundary by Hospital Creek, an ephemeral drainage conveying agricultural drainage from agricultural fields within the WSID and adjacent irrigation districts to the San Joaquin River (Figure 2). Outside of Refuge lands, the Hospital Creek corridor is denuded and severely incised hosting little to no riparian vegetation or natural hydrology. The channel is inconsistently dredged by landowners to maintain conveyance. Within Refuge lands, the Hospital Creek corridor has been preserved and contains native vegetation communities. The Refuge holds an obligation to maintain conveyance of agricultural drainage water from Hospital Creek across Refuge lands to the San Joaquin River. To meet this obligation, the Refuge undertakes maintenance activities that include dredging of sediment from adjacent agricultural lands and removal of beaver dams as needed. The Hospital Creek corridor adjacent to the Project Area hosts dense stands of cottonwood-willow riparian forest containing high-quality habitat for riparian-obligate species. The corridor is constricted by USACE levees on its north and south sides. These levees stand up to 42 feet elevation with steep sides and a levee-top road.

The Project Area is bordered on the west by private lands, some in active agriculture production, containing furrow-irrigated row-crop including tomatoes, corn, winter wheat, alfalfa, and melons. These fields are located on a native terrace which has not flooded (despite numerous levee breaches and other system failures) in recorded history. Lands atop this terrace, but lower in elevation than the top of the federal levee within the former RDs 2100 and 2099 (Hagemann and Vierra Tracts), have had flowage easements acquired over them to compensate the landowners from potential flood impacts associated with the failed levees. The Project Area is bordered on the east by prior restored riparian forest habitats on Refuge lands along the San Joaquin River.

### 2. **Action Area Setting**

The Action Area comprises the boundaries of the proposed installation of gated pipes through the downstream end of the levee within former Reclamation District 2100 (see Figures 2 and 4). The Action Area includes approximately 0.3 acres of gravel roads and levee slopes dominated by annual grasses and other non-native vegetation. The Action Area is located approximately 1 mile west of the San Joaquin River. The Action Area includes one power pole and one pump station that has been used in the past to drain flood waters from the "dry" side of the levee to the San Joaquin River Floodway (see Figure 5).

The Action Area sits at the terminus of one major drain canal for the property (see Figure 4). Prior to its acquisition by the USFWS, the Project Area was farmed. Groundwater levels in this area are generally very shallow excepting years of extreme drought due to the accumulation of sub-surface agricultural runoff from upstream

irrigated lands, and the general topography of the area. To preserve agricultural productivity for lands behind the levee, prior landowners constructed drainage infrastructure (canals, ditches, valves, and culverts) across the site, directing drain water to the site's lowest topographic location – the Action Area. To drain unwanted high water, the prior owners installed a pump to convey water from the drain canal to the designated floodway of the San Joaquin River. Power poles were installed in the levee and an electrical box encased in a metal cage designed to abate vandalism and wire theft. These features will be preserved during the installation of the gated pipes.

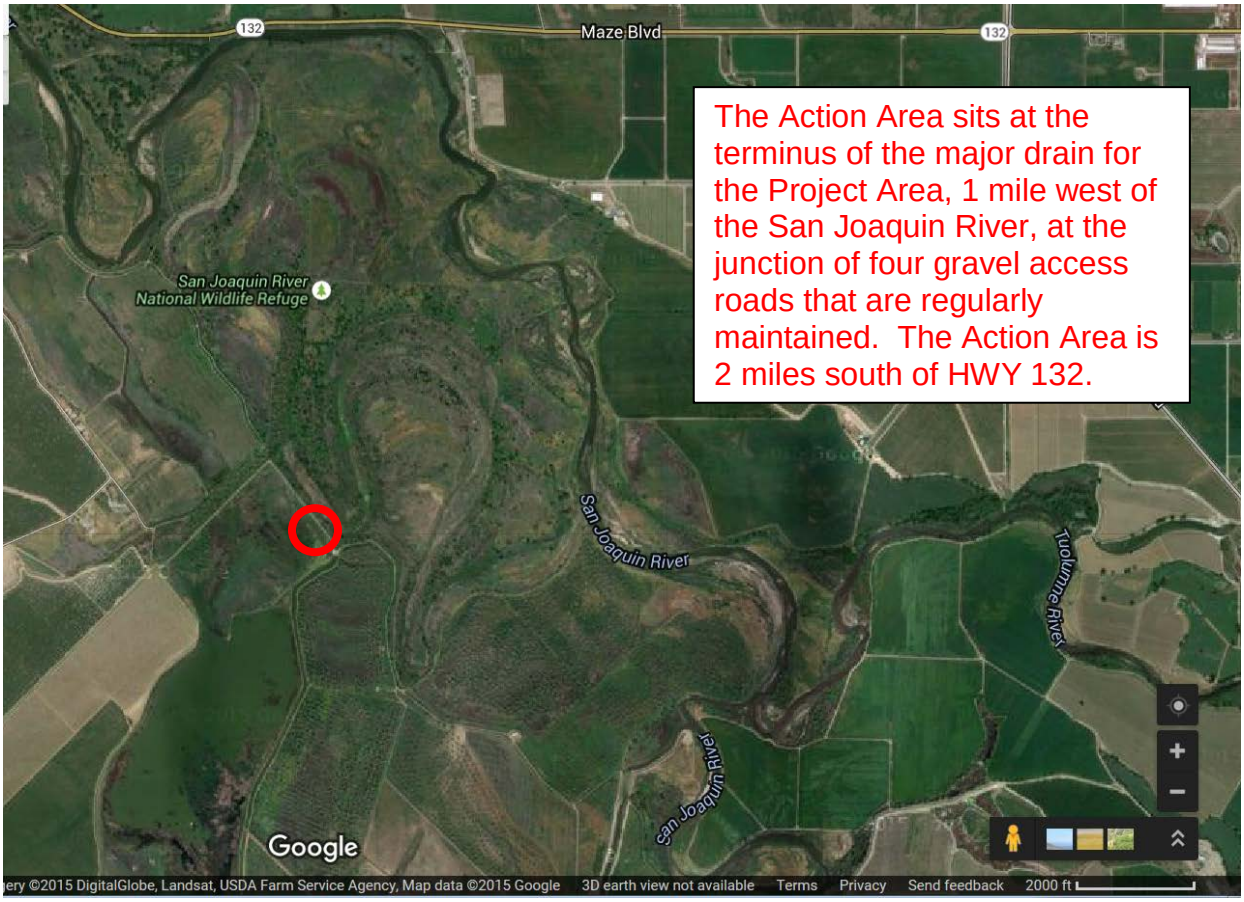

Figure 4. Action Area Location Map

The entire Action Area is above the high water mark of ponded water in the adjacent canal and ponded area to the north, and is highly disturbed as a staging area for maintenance of the existing pump. Because of the disturbed nature of the Action Area and the extent of proposed disturbance (staging, excavation, stockpiling, etc.) we do not anticipate the Project will have an effect on protected species or habitats under Fish and Game Code section 1600, the California Endangered Species Act (Fish & G. Code, § 2050 et seq.) the federal Endangered Species Act (16 U.S.C. § 1531 et seq.), or the federal Clean Water Act (33 U.S.C. § 1251 et seq).

Figure 5. Site Plan for Action Area

### B. Project Activities

*Pipe Installation at the northern end of the Hagemann Tract*

DWR proposes to install two additional gated pipes (72-inch pipes fitted with manually-operated slide gates) and replace 1-36 inch pipe through the existing levee (see Figure 2 – "Action Area", Figure 3 – northernmost "breach" within RD 2100, and Figures 4 and 5). This action will provide sufficient flow into and out of the Project Area. This will alleviate some flooding downstream and signal to salmonids which direction to exit the floodplain safely. Additionally, the pipes will allow water to flow back into the river before water temperatures climb to lethal levels. This action will alter the physical conditions of the site. Detailed engineering drawings for the pipe installation will be submitted to the CVFPB to support permitting. Section III, Environmental Effects, describes the pipe installation and potential resulting impacts.

### 1. Action Area Preparation

The Action Area will be prepared through vegetation clearing using only hand tools overseen by a qualified biologist within the Action Area. Vegetation within the Action Area is primarily non-native. The Action Area will be surveyed for special-status plant and animal species by qualified biological monitors prior to vegetation clearing to ensure that no protected species or habitats will be disturbed. If protected species are found in the Action Area the biological monitors will consult with USFWS and CDFW to determine appropriate avoidance measures.

### 2. Pipe Installation

Excavation will occur in the winter of 2015/2016, in close collaboration with the CVFPB to ensure flood safety.

An approximate 50-foot levee segment will be excavated to allow for pipe installation. Two 72-inch and one 36-inch corrugated pipes will be installed through the levee at field grade. Each pipe will be equipped with manual slide gates accessible from the levee top. Backfilling will be performed to typical engineering standards using the excavated soil and any additional soil needed will be imported and meet California Code of Regulations (CCR) Title 23 standards for embankment fill. The side slopes will be graded to match existing slopes and the footprint of the levee will remain unchanged. The installation will require up to 10 working days (6 hours of operation per day for a total of 60 working hours for the Project) with a 40 horse-power (hp) excavator and up to two site visits per day using 4-wheel drive trucks (visits originate in Modesto for a total round trip mileage of 26 miles per trip or 520 miles for the Project).

### 3. Revegetation

The surface of the excavation will be covered with 18 inches of native topsoil and planted with native vegetation that supports the wildlife recovery objectives of the Refuge. The vegetation will provide erosion protection for exposed levee slopes.

### 4. Maintenance

This IS/ND does not analyze potential impacts resulting from maintenance of the drainage pipes since the pipes will require only occasional, minor maintenance to clear sediment and debris from the openings and should not result in any significant environmental impacts. Such maintenance will be the responsibility of the landowner, USFWS. No other maintenance activities will be necessary as a result of the proposed Project.

## III. ENVIRONMENTAL FACTORS POTENTIALLY EFFECTED

The proposed project could potentially result in less than significant effects on the resources below:

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

## IV. DETERMINATION:

On the basis of this initial evaluation:

☒ I find that the proposed project WOULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, the project impacts were adequately addressed in an earlier document or there will not be a significant effect in this case because revisions in the project have been made that will avoid or reduce any potential significant effects to a less than significant level. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment. An ENVIRONMENTAL IMPACT REPORT will be prepared.

Signature _____ Date 11/9/15

Eric Koch, Chief, Flood Projects Office
Printed Name

Department of Water Resources
For

## V. ENVIRONMENTAL EFFECTS

For this environmental effects analysis, there are two areas of effect that are described and shown graphically in Figures 2, 4 and 5. The larger area totaling over 3,000 acres is referred to as the "Project Area." The installation of gated pipes affects an area totaling approximately 0.3 acres and referred to as the "Action Area" and is shown in aerial photography in Figures 4 and 5. The CEQA Initial Study checklist form is located in Appendix A.

### A. Aesthetics

The Project Area is a topographic bottomland, with no scenic vistas afforded due to lack of natural topography. The lands surrounding the Project Area are dominated by row crop and orchard agriculture and dairies. The visual quality of these areas is poor due to obstruction of long-range views by orchard canopies, and dominance of disturbed soils and animal feeding operations. The Action Area is currently dominated by non-native herbs and weeds (River Partners, 2011) and is surrounded by restored and remnant habitat areas on the Refuge.

The Project will enhance the aesthetics of the area by supporting the proper functioning (i.e. inundation and drainage) of wetland habitat features consistent with the Comprehensive Conservation Plan for the San Joaquin River National Wildlife Refuge (USFWS, 2006). This improvement in aesthetic values has been referenced by news media for several years (Modesto Bee, 2008, 2009, 2010, 2012, 2014).

The restoration of appropriate drainage supporting natural habitat types within the Action Area will improve the aesthetics of the surrounding areas for a short distance, where visible. Therefore, no potential aesthetic impacts would result from the proposed Project.

### B. Agriculture and Forestry Resources

No agricultural or forestry resources exist within the Project Area. Fields within the Project Area were cleared and leveled for farming in the 1930's (River Partners, 2002), and were purchased by USFWS in 1998 for inclusion in the Refuge. Since the purchase, the fields have been restored to natural forest, wetland and shrubland communities using horticultural planting techniques and wetland grading. In the Comprehensive Conservation Plan for the San Joaquin River National Wildlife Refuge, the Project Area was identified as a target for riparian habitat restoration (USFWS 2006). The lands of the Project Area are restricted by perpetual conservation easements through the USDA NRCS' Floodplain Easement Program which prohibits their use for agricultural

production. As Federally-owned lands, the Project Area is excluded from county zoning ordinances.

Agricultural lands are adjacent to the Project Area. These lands are expected to benefit from the Project as they will experience improved drainage following periods of flooding. Without the Project, these lands are subject to saturation and inundation from haphazard flooding through the growing season, causing potentially substantial economic losses. With the installation of gated pipes that promote faster drainage from the site, this negative impact is ameliorated.

The main intake canal for the WSID bisects the Project Area and provides irrigation water from the San Joaquin and Tuolumne Rivers for agricultural users to the west of the Project Area. This canal sits below grade and is subject to high rates of sedimentation currently. The canal is maintained annually by the WSID including dredging and vegetation removal. In prior flood events, the dredge piles lining the canal's edges have impeded flows onto the Project Area until river flows reach an overtopping elevation, then flood flows have overtopped and eroded the dredge piles. Because the piles are used for vehicular access, this erosion has been problematic for WSID and its canal maintenance needs.

The proposed Project will provide an equalization of hydraulic pressure on both sides of the dredge piles that line the WSID canal during flood events which will reduce the likelihood of undesirable erosion of the dredge piles and the roads atop them. The proposed Project will also reduce the amount of time that floodwaters remain on lands adjacent to the canal and its banks, reducing the potential for erosion and sedimentation during floods. The Project also affords the potential of future coordination of flood management with WSID's fish screening Project (described in Utilities/Service Systems). For these reasons, the Project will not have a negative impact on the functioning of the WSID main intake canal or maintenance activities of the WSID, nor will it have a negative effect on the future fish screening Project envisioned by WSID.

Proposed activities will not result in conversion of farmland or forestland to non-agricultural uses. The proposed Project will improve flood safety for downstream farmlands, and will improve drainage regimes for upstream farmlands and for the WSID Main Intake Canal. Additionally, the proposed Project will provide an opportunity for future collaboration and benefit to the WSID's fish screening Project which is currently in development. Therefore, no potential agricultural or forestry impacts would result from the Project.

### C. Air Quality

The Project is located in the San Joaquin Valley Air Basin where air quality is regulated by the San Joaquin Valley Air Pollution Control District (SJVAPCD). In the short-term (during installation of gated pipes), this Project will increase air

pollutant emissions related to the operation of excavation equipment and vehicles transporting personnel to and from the Project site. Temporary use of excavation equipment will be necessary to prepare the Action Area for pipe installation, and emissions from this construction equipment, while minor in scale, contribute to cumulative air quality impacts in the region.

In the long-term (post-installation of gated pipes), this Project will create an undetermined positive contribution to carbon storage as the vegetative communities supported by the installation of the gated pipes are dominated by species which accumulate woody tissue both above and below ground (preliminary results of an investigation of carbon sequestration for riparian forest restoration can be found in Pearson et.al. 2008).

The Project will not conflict with any of the following applicable plans:

- California State Implementation Plan for Carbon Monoxide
- SJVAPCD Rules and Regulations
- SJVAPCD Climate Change Action Plan

Construction of the Project involves excavation and vehicular travel. Project construction would result in short-term air pollutant emissions from use of construction equipment, earth-moving activities (grading), construction workers' commutes, materials deliveries and short-distance earth and debris hauling. To aid in evaluating potentially significant construction and/or operational impacts of projects, SJVAPCD has prepared an advisory document, the Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI), which contains standard procedures for addressing air quality in CEQA documents (SJVAPCD, 2015). The guide was adopted in 1998, and revised in 2002 and 2015. GAMAQI presents the Small Project Analysis Level (SPAL) screening tool to screen the Project for potentially significant impacts.

Using project type and size, SJVAPCD has pre-quantified emissions and determined a size below which it is reasonable to conclude that a project would not exceed applicable thresholds of significance for criteria pollutants. A project that meets the screening criteria at this level requires no further analysis and air quality impacts of the project may be deemed less than significant. Table 1 below (from GAMAQI Table 5-2), which SJVAPCD recommends using as part of the initial screening process, shows the maximum trips per day to be considered a SPAL project. The Project's anticipated maximum vehicular travel of 20 trips of 26 miles round trip falls well below the "Small Project Analysis Level" of the District, which is 1,506 trips per day (see Figure 6). Table 2 below (from GAMAQI Table 5-3(d)), shows the Project size by land use category. The Project's anticipated use of excavation equipment to install gated drainage pipes in an area smaller than 10,000 $ft^2$ also falls well below the "Small Project Analysis Level" of the District of 510,000$ft^2$ for general light industry. Therefore, the Project meets the SPAL criterion for project type and size, and is excluded from quantifying criteria pollutant emissions for CEQA purposes.

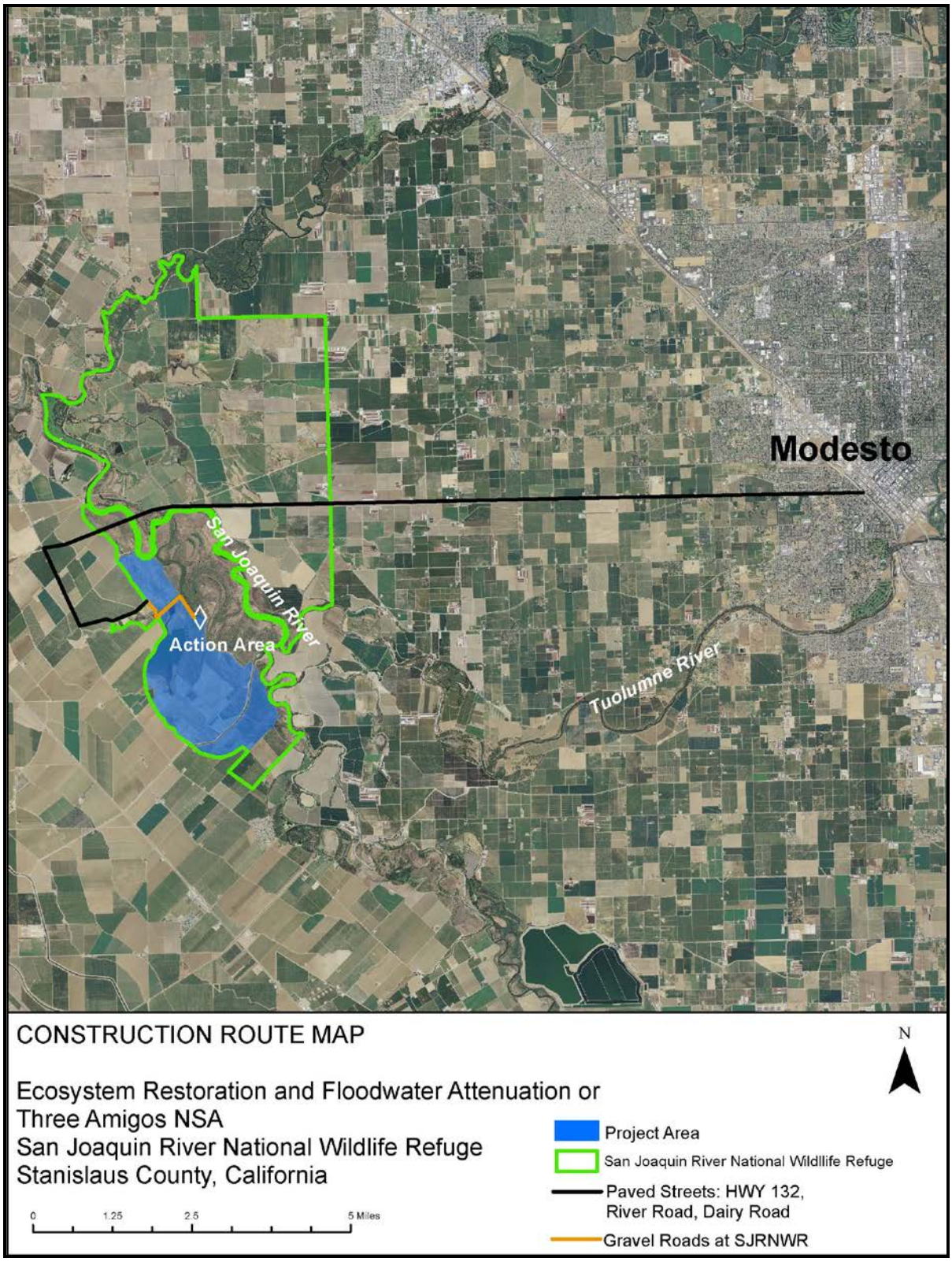


Figure 6. Construction Route Map: vendors travel from Modesto to the site via existing paved and gravel roads.

**Table 1**
Small Project Analysis Level (SPAL) by Vehicle Trips

| Land Use Category | Project Size |
|---|---|
| Residential Housing | 1,453 trips/day |
| Commercial | 1,673 trips/day |
| Office | 1,628 trips/day |
| Institutional | 1,707 trips/day |
| Industrial | 1,506 trips/day |

Source: SJVAPCD-From the San Joaquin Valley Air Pollution Control District's website: (http://www.valleyair.org/transportation/CEQA%20Rules/SPALTables61912.pdf accessed July 1, 2015):

**Table 2**
Small Project Analysis Level (SPAL) by Project Type

| Land Use Category – Industrial | Project Size |
|---|---|
| General Light Industry | 510,000 $ft^2$ |
| Heavy Industry | 920,000 $ft^2$ |
| Industrial Park | 370,000 $ft^2$ |
| Manufacturing | 400,000 $ft^2$ |

Source: SJVAPCD-From the San Joaquin Valley Air Pollution Control District's website: (http://www.valleyair.org/transportation/CEQA%20Rules/SPALTables61912.pdf accessed July 1, 2015):

With regard to ambient air quality standards,

*"the GAMAQI recommends that projects exceeding certain thresholds be analyzed for their impacts to local air quality through a computer modelling process called Ambient Air Quality Analysis (AAQA). In some cases of short-term or intermittent operation, it is possible to exclude some types of land use from performing AAQA without further quantification of emissions."*

The proposed Project fits the category of "Well-drilling or Work-over Operations (oil, gas, or water)" which are excluded from performing AAQA for CEQA purposes. Table 3 below shows the Project size and categories that are excluded from performing AAQA. Therefore, potential air quality impacts resulting from temporary construction of the proposed Project would result in a less-than-significant impact.

**Table 3**
Small Project Analysis Level – Ambient Air Quality Analysis

| Categories | Project Size |
|---|---|
| Emergency-use Engineers (generators, fire pumps) | All Projects |
| Well Drilling and Work-over Operations (gas, oil, water) | All Projects |
| Residential Development (construction) | 400 dwelling units |

Source: SJVAPCD-From the San Joaquin Valley Air Pollution Control District's website: (http://www.valleyair.org/transportation/CEQA%20Rules/SPALTables61912.pdf accessed July 1, 2015):

Despite the Project's small size falling well below the thresholds for significance recommended by the SJVAPCD, an analysis of construction-related emissions was completed using the current California Emissions Estimator Model (CalEEMod). CalEEMod calculates both criteria pollutant and greenhouse gas emissions, providing data on construction criteria air pollutants. The proposed Project's criteria pollutants and greenhouse gas emissions results from the CalEEMod are presented in Table 4. As indicated by the results of the CalEEMod, the proposed Project would not contribute substantially to greenhouse gas emissions or criteria pollutants, therefore impacts would be less-than-significant.

**Table 4**
CalEEMod Estimates of Project emissions related to SJVAPCD thresholds

| Pollutant | CalEEMod Project Estimate (tpy) | SJVAPCD Thresholds (tpy) |
|---|---|---|
| CO | 0.0773 | 100 |
| $NO_x$ | 0.0997 | 10 |
| ROG | 0.0105 | 10 |
| $SO_x$ | 9.000 e-005 | 27 |
| $PM_{10}$ | 0.0288 | 15 |
| $PM_{2.5}$ | 0.0182 | 15 |

Source: CalEEMod- From the Sacramento Metropolitan Air Quality Management District's website: (http://www.airquality.org/ceqa/index.shtml accessed July 1, 2015):

The closest sensitive receptor (residence) is located over 6,500 feet away from the Action Area. The Project Area surroundings are agricultural and the residential density is low (Stanislaus County, 2010). The Project proposes no demolition of existing buildings, and no alteration of sources of toxic air contaminants or hazardous materials. There will be no exposure of sensitive receptors to substantial pollution concentrations. Therefore, no impact would result from construction of the proposed Project.

The Project will not produce any significant objectionable odors. The Project is not adjacent to and will not influence any odor-causing facilities such as wastewater treatment facilities, petroleum refineries, or feed lots. Feed lots and

dairies are in the region surrounding the Project area, but the proposed Project will have no negative effect on odor production from these adjacent facilities. For these reasons, it is not anticipated that odor complaints associated with the Project would exceed one complaint per year. Therefore, there is no anticipated impact regarding the creation of objectionable odors.

### D. Biological Resources

The Project is consistent with the habitat restoration goals of USFWS as described in the Comprehensive Conservation Plan for the San Joaquin River National Wildlife Refuge (USFWS 2006). The primary goals of that plan are to improve habitat quality for common species of plant and wildlife as well as species identified as candidate, sensitive or special status species. The proposed Action Area is defined as a disturbed levee slope without suitable vegetation for protected wildlife. The Project would result in minimal, temporary impacts during construction (vegetation clearing, excavation and installation of the gated pipes). However, due to the absence of suitable habitat and temporary nature of the Project, the proposed Project would not result in a substantial adverse effect on habitat. The proposed Project would result in no impact on species identified as a candidate, sensitive, or special status species. Table 5 below describes the potential impacts resulting from the proposed Project. Pre-construction wildlife surveys will be conducted by a qualified biologist, using USFWS and/or CDFW protocol. If sensitive species are identified in the Project Area, coordination with USFWS and CDFW will occur and appropriate measures would be developed to avoid potential impacts.

The proposed Project would not result in an impact on any riparian habitat or other sensitive natural communities. The proposed construction activities are temporary and intend only to remove vegetation deemed necessary for excavation and placement of the new gated pipes. The Action Area is located over 1 mile from the San Joaquin River. The long-term effects of the proposed Project would result in permanent and positive effects on over 2,500 acres of native habitat types within the Project Area which will benefit from the improved inundation and drainage regime.

The Project will enhance migratory corridors for wildlife across the Project Area and across the region by enhancing habitat values within the San Joaquin River riparian corridor. This river corridor is a migratory pathway for avian species of the Pacific Flyway as well as terrestrial mammals.

Potential impacts on federally protected wetlands as defined pursuant to section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) were analyzed in previous documents. The proposed Project activities include no dredge or fill in any wetland areas, nor do they include any

negative impacts to wetland vegetation or hydrology. Therefore, the proposed Project will not result in any new, unforeseen impacts.

The proposed Project would not interfere negatively with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. The Project will improve out-migration conditions for native fish that are triggered by flow velocities (such as salmonids). Therefore, the Project will have a positive impact on movement of wildlife across the Project Area.

Several listed species occur or have the potential to occur within and adjacent to the Project Area. These species and the Project's expected effect on habitat and populations are described below. The proposed actions will support recovery of these species by promoting river-floodplain connectivity which is required to sustain the habitats upon which these species depend.

The proposed Project would result in no impact on local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. The Project does not propose to remove any trees.

The Project Area is not within any adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan. Therefore, the proposed Project would result in no impact to HCPs or NCCPs.

**Table 5**. Special-status species occurring or with potential to occur within the Project Area

| Species | Status | Presence | Habitat | Project Effect Analysis |
|---|---|---|---|---|
| Riparian Brush Rabbit (*Sylvilagus bachmani riparius*) | FE, CE | Confirmed | Riparian shrublands. This species is threatened by flooding and habitat loss throughout its range. | **No effect:** The Project will increase flood frequency within the Project area. Elevated refugia exist across the Project Area to sustain the population through flooding. Additionally, the Project will support expanded protected habitat for this species during non-flood years. |
| San Joaquin woodrat (*Neotoma fuscipes riparia*) | FE, CE | Confirmed | Riparian forests. This species is threatened by flooding and habitat loss throughout its range. | **No effect:** The Project will increase flood frequency within the Project area. Elevated refugia exist across the Project Area to sustain the population through flooding. Additionally, the Project will support expanded protected habitat for this species during non-flood years. |
| Least Bell's vireo (*Vireo bellii pusillus*) | FE, CE | Confirmed | Riparian forests. This species is threatened by habitat loss and fragmentation. | **No effect/positive effect:** The Project will provide enhanced hydrology supporting habitat for this species as well as connectivity along its migration corridor. |
| Yellow warbler (*Dendroica petrechia*) | CSC | Confirmed | Riparian forests. This species is threatened by habitat loss and fragmentation. | **No effect/positive effect:** The Project will provide enhanced hydrology supporting habitat for this species as well as connectivity along its migration corridor. |
| Willow flycatcher (*Empidonax traillii*) | FSC, CT | Confirmed | Riparian forests. This species is threatened by habitat loss and fragmentation. | **No effect/positive effect:** The Project will provide enhanced hydrology supporting habitat for this species as well as connectivity along its migration corridor. |
| Western yellow-billed Cuckoo (*Coccyzus americanus occidentalis*) | FC, CE | Potential | Riparian forests. This species is threatened by habitat loss and fragmentation. | **No effect/positive effect:** The Project will provide enhanced hydrology supporting habitat for this species as well as connectivity along its migration corridor. |

| Species | Status | Presence | Habitat | Project Effect Analysis |
|---|---|---|---|---|
| Greater Sandhill crane (*Grus canadensis tabida*) | CT | Confirmed | Seasonal wetlands and irrigated farmlands. | **No effect/positive effect:** The Project will provide enhanced hydrology supporting habitat for this species as well as connectivity along its migration corridor. |
| Chinook salmon Central Valley fall-run and late fall-run ESU (*Oncorhynchus tshawytscha*) | FC, CSC | Potential | Rivers, streams and floodplains throughout the Central Valley. | **No effect/positive effect:** The Project will provide enhanced floodplain inundation and river-floodplain connectivity supporting habitat for this species. |
| Steelhead, Central Valley ESU (*Oncorhynchus mykiss*) | FT | Potential | Rivers, streams and floodplains throughout the Central Valley. | **No effect/positive effect:** The Project will provide enhanced floodplain inundation and river-floodplain connectivity supporting habitat for this species. |
| Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) | FT | Potential | Mature elderberry shrubs with stems greater than 1" width. Elderberry shrubs are not tolerant of long-duration flooding (>14 days). | **No effect:** The Project will increase flood frequency within the Project Area. Elevated refugia exist across the Project Area to sustain mature elderberry shrubs through flooding. Additionally, the Project will enhance drainage from the Project Area, providing shorter-duration of flooding and higher likelihood of survival of mature elderberry shrubs during floods. |

ESU: Evolutionary Significant Unit
FE: Federally Endangered
FT: Federally Threatened
FC: Federal Candidate
FSC: Federal Species of Concern
CE: California Endangered
CT: California Threatened
CSC: California Species of Concern

### E. Cultural Resources

Compliance with the National Historic Preservation Act and State Office of Historic Preservation in support of prior habitat restoration on adjacent lands has resulted in no identification of protected cultural resources within or adjacent to the Action Area (USFWS, 2006). There are no known protected cultural resources within the Action Area or immediate vicinity therefore the proposed Project would result in no impact or a substantial adverse change of a historical resource. Nonetheless, the following avoidance measures will be implemented to eliminate potential disturbances to archeological or cultural resources in the event they are discovered onsite during construction:

- If historical or unique archaeological resources are accidentally discovered during Project activities, all work would temporarily cease in the immediate area until the findings can be assessed by a qualified archaeologist and an appropriate course of action can be determined. If the find is found to be an historical or unique archaeological resource, time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation must be available (Cal. Code Regs., tit. 14, § 15064.5, subd. (f)).

There are no known paleontological resources or unique geologic features onsite, therefore no impact to such resources would result from the proposed Project.

It is not anticipated that the proposed Project implementation would disturb any human remains, including those interred outside of formal cemeteries. The disturbance of human remains within the Action Area is unlikely given that no archeological sites have been identified in the vicinity of the Action Area. The disturbance of human remains in the Project Area is unlikely given that no ground disturbance is proposed outside of the Action Area. However, the following BMPs will be implemented in the event such remains are found.

- If human remains are found, such remains would be subject to the provisions of Health and Safety Code section 7050.5(b). The requirements and procedures would be implemented, including immediately stopping work in the vicinity of the find and notifying the County Coroner. A DWR archaeologist would also need to be contacted immediately. If the remains are determined to be those of a Native American, the process for notification of the California Native American Heritage Commission (NAHC) and consultation with the individual(s) identified by the NAHC as the “most likely descendent” is set forth in Public Resources Code section 5097.98. Work in the vicinity of the find can restart after the remains have been investigated and appropriate recommendations have been made for their treatment and disposition.

Several prior Cultural Resources Surveys have been completed in conjunction with prior federal actions on the site. Four of these cover the Action Area, Project Area or areas immediately adjacent to it. These reports are listed below.

**Table 6**. Cultural Resources Surveys covering the Project Area and its vicinity

| Survey Reference | Date | Type | Findings within Action Area |
|---|---|---|---|
| Peak & Associates, Cultural Resources Assessment within Reclamation District 2092, Stanislaus County California (SJ 14) Peak & Associates, El Dorado Hills, CA | 1997a | Survey | Negative |
| Peak & Associates, Cultural Resources Assessment within Reclamation District 2031, Stanislaus County California (SJ 14) Peak & Associates, El Dorado Hills, CA | 1997b | Survey | Negative |
| Peak & Associates, Cultural Resources Assessment within Reclamation District 2101, Stanislaus and San Joaquin Counties California (SJ 14) Peak & Associates, El Dorado Hills, CA | 1997c | Survey | Negative |
| Speulda, L.A. U.S. Fish and Wildlife Service Historic Properties Identification and Evaluation Report of the Vierra Dairy. USFWS Cultural Resources Team, Sherwood Oregon | 1999 | Survey | Negative |

### F. Geology / Soils

The primary soil type in this vicinity as identified by the USDA National Resource Conservation Service Soil Survey of Stanislaus County California (USDA, 2015) is Merritt silty clay loam. Merritt silty clay loam is defined as a thermic Fluvaquentic Haploxerolls fine-silty on 0 to 2 percent slopes. The Merritt series is partially drained and occasionally flooded. Major uses for the Merritt soil typically are used to grow irrigated crops. The proposed Project consists of installing two gated 72-inch and one gated 36-inch corrugated pipe through the levee matching the elevation of the existing 36-inch drain pipe. Minimal excavation is required only for pipe installation, and minimal vegetation removal would occur. These soils would not cause instability which result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

Stanislaus County contains no known earthquake faults (California DOC, 2011) and has experienced no seismic shaking in recorded history (USGS, 2011). The topography of the Project Area is flat bottomlands, which precludes the possibility of landslides. The use of earthmoving equipment to install drain pipes will increase short-term topsoil erosion potential in a small area (<0.3 acres), however, the establishment of dense native vegetative cover will protect the soil surface from erosion in the long term. Stanislaus County is not an Earthquake

Fault Zone, and there are no known faults in the Project Area. No major ground disturbance will occur as part of the proposed Project. The proposed Project would have no impact on earthquake faults, ground shaking, seismic-related ground failure, including liquefaction, or landslides.

The Soil Survey of Stanislaus County, Western Part (NRCS 2004) identifies no expansive soils within the Project Area. The proposed Project would not create substantial risks to life or property.

The Project contains no alterations to waste water disposal systems. There are no residences located within the Project footprint and the proposed Project does not involve septic tanks or the use of sewer systems.

### G. Greenhouse Gas Emissions / Climate Change

Warming of the climate system is now considered to be unequivocal (IPCC, 2007). Global average surface temperature has increased approximately 1.33 °F over the last one hundred years, with the most severe warming occurring in the most recent decades. Eleven of the twelve years from 1995 to 2006, rank among the twelve warmest years in the instrumental record of global average surface temperature (going back to 1850). Continued warming is projected to increase global average temperature between 2 and 11 °F over the next one hundred years (IPCC, 2007).

The causes of this warming have been identified as both natural processes and as the result of human actions. Increases in greenhouse gas (GHG) concentrations in the Earth's atmosphere are thought to be the main cause of human induced climate change. GHGs naturally trap heat by impeding the exit of solar radiation that has hit the Earth and is reflected back into space. The six principal GHGs of concern are carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), sulfur hexafluoride ($SF_6$), hydrofluorocarbons, and perfluorocarbons.

It is unlikely that any single project by itself could have a significant impact on global climate change. However, the cumulative effect of human activities has been clearly linked to quantifiable changes in the composition of the atmosphere, which in turn have been shown to be the main cause of global climate change (IPCC, 2007). Therefore, the analysis of the environmental effects of GHG emissions from the Project will be addressed as a cumulative impact analysis.

Implementation of the Project would contribute to increases of GHG emissions during construction only, as the minimal operation activities associated with maintenance of the gated pipes would not create emissions in excess of what currently occurs for the Project Area. Construction GHG emissions are a one-time release and are, therefore, not typically expected to generate a significant contribution to global climate change. Due to the size of the Project, the Project's

construction related GHG contribution to global climate change would be considered negligible on the overall global emissions scale. Therefore, the Project is not expected to substantially hinder the State's ability to attain the state-wide GHG reduction goal or result in any significant impacts related to construction GHG emissions. Nevertheless, the Project's construction-related GHG emissions have been estimated for discretionary purposes. The estimated GHG emissions attributable to construction of the proposed Project would be associated with increases of $CO_2$ from construction vehicles and equipment.

Construction emissions were estimated using the Road Construction Emissions Model, Version 7.1.1. Estimated emissions from the model results are expressed tons per the entire construction project, but have been converted to annual metric tons of $CO_2$ equivalent units of measure (i.e., $MTCO_2e$), which is the industry standard measurement units for GHG emissions. Table 7 below presents the Project's construction-related GHG emissions. The Project's construction-related GHG emissions do not exceed the Sacramento Metropolitan Air Quality Management District's significance threshold of 1,100 metric tons/year of $CO_2$ for construction GHG emissions.

**Table 7 Project Construction GHG Emissions**

| | Annual CO2 emissions ($MTCO_2e$) |
|---|---|
| TOTAL GHG Emissions | 2.45 |

Source: Project's Road Construction Emissions Model results (See Appendix B).

As stated above, construction-related GHG emissions are a one-time release and are, therefore, not expected to generate a significant contribution to global climate change.

In addition, the Project will support the establishment of native wetlands and forest habitat types over time which is known to sequester GHGs in some quantity (Pearson et.al. 2008). Preliminary estimates of $CO_2$ sequestration for one acre of this habitat type at 15 years of age range from 7 to 22 $MTCO_2$. The Project will support the development of native habitat types over 2,500 acres, yielding a 15-year estimate of 17,500 to 55,000 $MTCO_2$ of sequestration (Pearson et.al. 2008). Considering the limited scale of GHG emissions associated with the Project, and the long term reduction of associated emissions to negative levels, there will be no significant impact on greenhouse gas emissions as a result of the Project.

California's climate change legislation, Assembly Bill (AB) 32 (Stats. 2006, ch. 488), the California Global Warming Solutions Act of 2006, requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. The Air Resources Board, which monitors and regulates sources of emissions of GHGs, approved the Climate Change Scoping Plan (Scoping Plan) in December 2008 that includes a comprehensive set of actions designed to reduce overall GHG

emissions in California. Since construction of the Project will occur in 2015 and emissions will be minimal, the Project will not conflict with the AB 32 Scoping Plan.

Therefore, the Project's GHG emissions would not be expected to conflict with the State's goal per AB 32 or any other plans or regulations for reducing GHG emissions, and a less-than-significant impact would result.

### H. Hazards and Hazardous Materials

State agencies regulating hazardous materials are the California Environmental Protection Agency (Cal/EPA) and the Office of Emergency Services (OES). The California Highway Patrol and California Department of Transportation (DOT) enforce regulations for hazardous materials transport. Within the Cal/EPA, the California Department of Toxic Substances Control (DTSC) has primary regulatory authority for hazardous materials regulation enforcement. State hazardous waste regulations are contained primarily in the California Code of Regulations Title 22. The California Occupational Health and Safety Administration (Cal OSHA) has developed rules and regulations regarding worker safety around hazardous and toxic substances.

The CalEPA maintains the 'Cortese List' that can be used as a planning tool by State, local agencies and developers to comply with the California Environmental Quality Act. The Cortese list provides information about the location of hazardous material sites as well as contaminated public drinking water wells, unauthorized releases form underground storage tanks, migration of hazardous wastes form solid waste disposal facilities and cease and desist and clean-up and abatement orders for discharges of hazardous waste. The proposed Project Area was researched for Cortese Sites using the CalEPA list tool (CalEPA, 2015). No sites were located within or immediately adjacent to the proposed Project footprint (DTSC, 2015).

There are no known hazardous materials within the Project Area. During the construction period, diesel fuel and oil may be used. The Project site would not require long-term storage, treatment, disposal, or transport of hazardous materials.

Construction vehicles on site may require emergency maintenance that may result in the release of oil, diesel, transmission fluid or other materials. These materials would not be used in quantities or be stored in a manner that would pose a significant hazard.

The following avoidance measures will be implemented to reduce the potential impacts resulting from hazardous waste:

- Diesel fuel and oil will be used, stored and disposed in accordance with standard protocols for handling of hazardous materials. All personnel involved in use of hazardous materials will be trained in emergency response and spill control.

- During construction activities, construction personnel will prevent oil, grease, fuels, and other petroleum products, toxic chemicals, and any other substances that could be deleterious to aquatic life from contaminating the soil and/or entering waters of the state. Construction personnel staff will immediately remove such substances from any place where they could enter waters of the state and/or adversely affect fish and wildlife resources. Construction personnel staff will attempt to contain any releases or spills of such substances, and shall report any significant spills as soon as possible to the California Emergency Management Agency (Cal-EMA). In the event of a significant spill, work will cease immediately and workers will employ containment methods if it is safe to do so. DWR will make notifications to the appropriate agencies within the regulatory time frames.

No schools are located within one-quarter mile of the Project site. The proposed Project would not create hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste.

Review of the California Department of Toxic Substances Control EnviroStor database determined that the Project site is not included on any lists of hazardous material sites. The proposed Project would not create a significant hazard to the public or the environment.

The closest public use airport, Modesto City-County Airport, is located in Modesto, approximately 15 miles from the Project Area. The proposed Project would not result in a safety hazard for people residing or working in the Project Area.

The closest private use airport is located approximately 2 miles east of the Project Area. The proposed Project would not result in a safety hazard for people residing or working in the Project Area.

The proposed Project consists of installation of 3 gated pipes and would not impair or physically interfere with an adopted emergency response or evacuation plan and construction personnel are required to be trained in emergency response and spill containment.

The proposed Project would not expose people or structures to a significant risk of loss, injury or death due to wildland fires. As a standard safety practice during construction activities, construction personnel would have fire prevention equipment on site including fire extinguishers and shovels.

## I. Hydrology / Water Quality

This Project will have a positive impact on flooding and water quality.

Hydraulic and hydrologic engineers have evaluated the Project's impacts on floodwaters (USACE 1998, PWA 2001, PWA 2004, ESA 2015, DWR 2015). In 2015, a hydrologic and hydraulic analysis was completed to evaluate the effect of levee modifications to the landscape. This and prior analysis done by PWA determined that the Project may significantly reduce flood hazards locally.

One main benefit of the Project is the conversion of lands previously subject to flood damage to flood compatible land uses (floodplain habitat). These lands will no longer need to be protected from floods with project or private levees, which must be maintained and repaired. The Project also enhances flood hazard reduction goals by increasing potential for transitory floodwater storage within the Project Area (PWA 2005) and reducing peak flood stage measured at Maze Road Bridge by 0.6 feet (ESA 2015) relative to a "no Refuge flooding" condition.

Since the Project will support the development of habitat through improving inundation and drainage from restored riparian areas, it is important to consider the net effect of the Project on the conveyance of floodwaters and associated river stages. The Project is not intended to hold vegetation to some initial baseline condition, but rather to accommodate the expected ultimate mosaic of vegetative and geomorphic conditions that will develop at the Project Area over time. Given that the increase in vegetation and accumulated sediment associated with the project will occur in the Project Area which is <u>outside</u> of the designated floodway, rather than within the designated floodway, the Project is not expected to negatively impact the designed floodway capacity.

The Project will positively affect the existing drainage pattern of the Project Area. It will not alter the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site, but instead will substantially reduce the duration of flooding on and off-site.

Specifically, the proposed gated pipes are sized to allow for drainage from the Project Area during a flood event at a rate that matches the natural recession limb of the flood hydrograph of the San Joaquin River (ESA, 2015). Without implementation of the proposed Project, flood flows which accumulate behind the levees drain back to the San Joaquin River more slowly than the river naturally recedes, trapping aquatic wildlife. This has the effect of prolonging damaging flood conditions for downstream areas and within the Project Area. As floodwaters sit impounded behind the levee, their temperatures rise to levels that are lethal to salmonids and to native vegetation. This has been observed and documented during flood events in 2006 and 2011 (River Partners, 2008e). The implementation of the Project will both reduce the duration of damaging flooding off-site, and reduce the duration of damaging flooding on-site.

The Project will alter the movement of sediment-carrying floodwaters, and impacts of that change must be considered. The effects on flood flows have been considered through the hydraulics analysis. The impacts of the Project on sediment dynamics bear discussion, though they are expected to be minor. First, the installation of additional gated pipes at the Action Area will allow more water to enter and exit the site at that location. This will change sediment dynamics. Given the slow velocities with which flood waters will move across the Project site, water entering the Project site is expected to cause sediment to drop, effectively acting as a sediment trap for the waters that pass through it. Floodwaters are expected to leave the Project site with less sediment than they carried when entering the site. Thus, sedimentation outside of the Project Area, including in the designated floodway, is not anticipated.

Erosion impacts are another possible concern. Water leaving the Project Area site may more generally erode substrate outside of the Project Area as a result of local scour creating additional focused flow paths by which water will be leaving the Project Area. However, this concern is minimized by a feature of the Project's hydraulic setting. Drainage of the Project site will be limited by river stages, which tend to decline very slowly. As a result, the new pathway for flows created by the Project is not expected to significantly increase erosion within the designated floodway. Therefore, the proposed Project would not cause substantial erosion or siltation on- or off-site.

The Project will have a positive effect on water quality.

The current conditions of floodwater impoundment are damaging to riparian vegetation. Floodwaters impounded by the existing levee cause the vegetation to be inundated, causing native trees and shrubs to die and invasive vegetation to recruit onto the site. This invasive vegetation (including such noxious weeds as Salt Cedar – *Tamarisk spp.* and giant reed – *Arundo donax*) is less stable against wind and water erosion than native vegetation, thus undermines the stability of the site and could lead to greater soil surface erosion over time, thus impacting water quality over time.

Native riparian vegetation as would be supported by this Project through improved drainage would act as a buffer between agricultural lands and the San Joaquin River, adding to the water quality benefit of the Project. Dense riparian vegetation has been shown to improve water quality by filtering and retaining sediments, nutrients and some pollutants that would otherwise enter the San Joaquin River through denuded drain ditches and have potential negative impacts on amphibians, fish, and other aquatic organisms.

The proposed Project would not violate any water quality standards or waste discharge requirements, and in fact would benefit water quality as described above through the maintenance of native riparian vegetation providing soil

surface erosion protection, sediment trapping within the Project Area during flood events, and filtration of agricultural runoff prior to its introduction to the San Joaquin River.

The proposed Project consists of installation of 3 gated pipes and minimal vegetation removal within the Project footprint. The proposed Project would not draw from a groundwater aquifer. The proposed Project would not deplete groundwater supplies or interfere with groundwater recharge. Therefore, the proposed Project would not affect groundwater supplies or interfere with groundwater recharge in the proposed Project vicinity.

The proposed Project consists of installation of 3 gated pipes and minimal vegetation removal within the Project footprint. The nearest existing or planned storm water drainage system that is hydrologically connected to the Project is more than 12 miles downstream (City of Manteca). As described above, the Project will have a positive effect on the quality of site runoff through maintenance of permanent native riparian vegetation. Therefore the Project will not create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed areas. Such proposed actions will have no effect on housing patterns. The proposed Project would not result in house placement within the 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed areas. Such proposed change to drainage patterns associated with the drainage pipes would have a positive effect on flows within the 100-year flood hazard area by directing drainage off site and out of the 100-year flood hazard area more quickly. The Project thus has a positive effect on the 100-year flood hazard area and does not place additional structures at flood risk. Additionally, the provision of floodwater attenuation in the Project Area is expected to reduce peak flood stage in the vicinity of the Project Area by 0.6 feet, which could reduce flood hazard regionally.

The proposed Project would not expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of a failure of a levee or dam. The Project will allow flood water to evacuate the area more quickly than current conditions which will reduce the exposure of downstream communities to damaging high water. The Project will also reduce the likelihood of damaging erosion within and adjacent to the Project Area through the

equalization of hydraulic pressure on both sides of the former flood-control levees.

The proposed Project would not expose people or structures to inundation by tsunami, seiche or mudflow. The topography of the landscape surrounding the Project Area is flat, and lacks the physical potential to host tsunamis, seiches, or mudflows.

### J. Land Use / Planning

The land is owned by USFWS (fee title) and has not been farmed since the land acquisition in 1998. The Project is bordered by Refuge lands on all but the western edge, which is bordered by alfalfa, orchards, and irrigated row crops. As federal land, it is excluded from county land use designations. Prior to its acquisition, Stanislaus County designated the land as Agricultural. Adjacent lands are also designated Agricultural and Open Space in the Stanislaus County General Plan.

The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed areas within the Refuge. Construction work would not physically divide an established community. The proposed Project is surrounded by federal National Wildlife Refuge lands and there are no established communities within 1-mile of the proposed Project.

The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed areas. Proposed activities would not conflict with any land use plan, policy, or regulation of an agency with jurisdiction over the Project adopted for the purpose of avoiding or mitigating an environmental effect.

The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed areas. There are no Habitat Conservation Plans or Natural Community Conservation Plans in the Project vicinity. Thus the proposed Project will not conflict with any applicable habitat conservation plan or natural community conservation plan.

### K. Mineral Resources

The State Mining and Geology Board (SGMB), in concert with the California Department of Conservation (DOC), the California Geological Survey (CGS) and the Office of Mine Reclamation (OMR), and its stakeholders, has been fully engaged in implementing the legislative mandates of the Alquist-Priolo

Earthquake Fault Zoning Act (AP Act; Pub. Resources Code, § 2621 et seq.), Seismic Hazards Mapping Act (SHMA; Pub. Resources Code, § 2690 et seq.), and the Surface Mining and Reclamation Act of 1975 (SMARA; Pub. Resources Code, § 2710 et seq.). Local lead agencies (cities and counties with surface mines within their jurisdictions) have primary responsibility for implementing SMARA. Each of these lead agencies must have a surface mining ordinance certified by the SGMB as being in accordance with SMARA. SHMA programs and mandates closely resemble those of the AP Act. During the 2012-2013 reporting period, no new SHMA maps were produced by the CGS to be considered and commented on by the SMGB (SMGB, 2014).

SMARA uses four categories referred to as mineral resource zones (MRZ) to classify the likelihood for the presence of significant mineral deposits for an area. MRZ-1 means that there is little likelihood for the presence of significant mineral deposits. MRZ-2 means the area has at least $17.1 million worth (2009 threshold value) of suitable material that could be extracted and marketed profitably under present technological conditions. MRZ-3 means that there are areas containing mineral deposits but its significance requires further evaluation. MRZ-4 means that there is inadequate data for the area.

The General Plan for Stanislaus County identifies that the most significant deposits of sand and gravel for the County from a commercial perspective are found in old streambeds and adjacent to rivers and streams in the eastern part of the County, and that the only significant deposits of fine-grained sand deposits on the west side of the County are found adjacent to the San Joaquin River. Despite this narrative, the lands within the Project Area are not identified on the associated planning maps as containing sand and gravel resources.

The Action Area is located in an area designated under SMARA as MRZ-1 (little likelihood for the presence of significant mineral deposits). The Project Area includes some acreage of areas classified as MRZ-3a (known mineral occurrences of unknown mineral resource significance). The proposed Project is located wholly on federal National Wildlife Refuge lands. Any and all future use of the site for mineral exploration or extraction is precluded by the compatibility determination process for National Wildlife Refuges, thus further exploration of MRZ-3a areas is precluded by land ownership.

The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed areas. The proposed Project is located wholly on federal National Wildlife Refuge lands. Any and all future use of the site for mineral exploration or extraction is precluded by the compatibility determination process for National Wildlife Refuges. The proposed Project footprint is thus not located within an area designated by SMARA as a mineral resource. The proposed Project would not result in loss of a known mineral resource.

The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed areas. The proposed Project is located wholly on federal National Wildlife Refuge lands. Any and all future use of the site for mineral exploration or extraction is precluded by the compatibility determination process for National Wildlife Refuges. The proposed Project footprint is not located within an area designated by Stanislaus County's General Plan as a mineral resource. The proposed Project would not result in loss of a locally-important mineral resource recovery site.

### L. Noise

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude. Given that the typical human ear is not equally sensitive to all frequencies of the audible sound spectrum, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes low and extremely high frequencies, referred to as A-weighting, and is expressed in units of A-weighted decibels (dBA).

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Several different methods are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal and is expressed in terms of inches per second. The PPV is most frequently used to describe physical vibration impacts on buildings. Typically, groundborne vibration generated by human activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors to vibration include structures, people (such as residents, the elderly, and sick people), and vibration-sensitive equipment.

The proposed Project includes the installation of 3 gated pipes. The Project will have no impact on noise. Noise levels during implementation will be typical of historical agricultural activities on the Project site and current agricultural activities in the surrounding area.

The Stanislaus County General Plan identifies Noise-sensitive land uses in its Noise Element including the following:
1. Schools
2. Hospitals

3. Convalescent homes
4. Churches
5. Sensitive wildlife habitat, including the habitat of rare, threatened, or endangered species
6. Other uses deemed noise sensitive by the local jurisdiction

The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed areas. The proposed Project will not change land use – the Project Area is currently and will remain a wildlife refuge, meeting the Stanislaus County General Plan description of “Sensitive Wildlife Habitat”, a noise-sensitive land use. The Action Area is greater than 1 mile from all other noise-sensitive land uses listed in the Stanislaus County General Plan.

The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed areas. The duration of this stationary noise-generating activity will not exceed ten working days, and the timing of noise disturbance will not include hours earlier than 7am or later than 10pm. The noise thresholds identified in the Stanislaus County General Plan for stationary noise sources such as the proposed excavator are 55 Hourly dBA during the hours of 7am to 10pm, or maximum level of 75 dBA. According to the U.S. Department of Transportation’s Federal Highway Administration’s Construction Noise Handbook, construction equipment to be used for the proposed Project will not exceed 75 dBA maximum or 55 Hourly dBA. Therefore, the Project will not expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed areas. The Action Area is located on a wildlife refuge, more than 1 mile from any dwellings or structures. The short duration and low noise levels associated with the construction schedule (less than 10 working days, less than 6 hours of construction activities per day, during daytime hours only) is not excessive and is not expected to have an influence on sensitive receptors. Apart from construction personnel, this Project will not expose persons to or generate excessive groundborne vibration or groundborne noise levels.

The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed areas. The proposed Project does not include a permanent change to land use or noise levels. Therefore, the Project will not result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project.

The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed areas. The Action Area is located on a wildlife refuge, more than 1 mile from any dwellings or structures. The short duration and low noise levels associated with the construction schedule (less than 10 working days, less than 6 hours of construction activities per day, during daytime hours only) does not exceed thresholds identified in the Stanislaus County General Plan, and is not expected to have an influence on sensitive receptors.

Therefore, the Project will not result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project.

The proposed Project is not located within an airport land use plan or within two miles of a public or public use airport. Therefore, the Project will not expose people residing or working in the Project area to excessive noise levels.

The proposed Project is not located within two miles of a private airport. Therefore, the Project will not expose people residing or working in the Project area to excessive noise levels.

### M. Population / Housing

This Project will have no impact on population and housing. This Project will not increase population growth in the area or displace existing housing. The land was purchased by USFWS (fee title) as part of the Refuge in 1998. Goals of the National Wildlife Refuge System include to preserving, restoring, and enhancing their natural ecosystems. Being part of the Refuge excludes the Project Area from future development that would conflict with the goals of the National Wildlife Refuge System.

The proposed Project would not induce development or population growth directly or indirectly as it includes no new homes or businesses, nor does it include the extension of roads or other infrastructure.

The Project Area contains no existing housing, and would not affect housing in adjacent areas. The proposed Project would not displace people, existing housing or necessitate construction or replacement of housing. Therefore, the proposed Project would result in no impacts on population and housing.

### N. Public Services

The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed

areas. The Action Area and Project Area are located on a wildlife refuge, more than 1 mile from any facilities, schools, parks or communities. Therefore, the proposed physical impacts of the Project will not affect schools or parks.

The Project Area is a federal wildlife refuge managed by the USFWS which provides its own fire protection, police protection and emergency services. The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed areas. These actions will have no effect on public fire protection, police protection, or emergency services.

The proposed Project will have a positive effect on the performance objectives for flood protection services. As described above, hydraulic analysis performed for the Project identifies that the installation of 3 gated pipes will reduce local flood stage by 0.6 feet, and improve the drainage time for floodwaters during high-water events which will decrease the duration of flood events downstream by a matter of hours to days depending upon the severity of the high water event. This will reduce the duration of the demand for public services for flood management emergency responders in the vicinity of the Project Area, therefore the Project will have a beneficial effect on flood protection public services.

### O. Recreation

This Project will have positive effects on recreational resources. Natural habitats at the Refuge may increase visitor frequency to the Refuge if it is open to the public in the future. Restoration of habitat suitable to support game species will enhance the hunting base of the region which includes primarily waterfowl and some upland game bird hunting. Additionally, enhancement of habitat for fish will improve the recreational fishing opportunities for downstream residents.

The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed areas. The proposed Project would not increase the use of existing neighborhood and regional parks or other recreational facilities.

The proposed Project would not include recreational facilities or require the construction or expansion of recreation facilities and would not have an adverse physical effect on the environment.

### P. Transportation / Traffic

The installation of 3 gated pipes will require up to 10 working days (6 hours of operation per day for a total of 60 working hours for the Project) with a 40 horse-power (hp) excavator and up to two site visits per day using 4-wheel drive trucks

(visits originate in Modesto for a total round trip mileage of 26 miles per trip or 520 miles for the Project).

Figure 6 shows the route that will be used up to twice daily by the construction vendor to access the site. The route includes the use of Highway 132, a Stanislaus County General Plan “Class B” Expressway, which is a partially access-controlled road with traffic-controlled intersections at Major roads and other Expressways for a total of 9 miles, and 2.5 miles of two county-maintained roads (River Road, a Stanislaus County General Plan “Major Road”, which carries moderate- to high-volume traffic to and from collectors to other Majors, Expressways, and Freeways with a secondary function of land access and Dairy Road, a Stanislaus County General Plan “Local Road”, which serves as land access facilities in the agricultural areas of the County by providing both direct access to abutting property and movement of small volumes of people and goods for medium length trips).

The route also includes the use of 1.25 miles of gravel roads at the Refuge within the Project Area. These roads are maintained by the U.S. Fish and Wildlife Service.

The proposed Project includes two round trips between the Project site and Modesto for a period of up to ten working days. This level of road usage is consistent with the levels of usage for “Class B Expressways”, Major Roads, and Local Roads as described in the County General Plan Circulation Element. Therefore, the proposed Project will not cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system.

The proposed Project includes two round trips between the Project site and Modesto for a period of up to ten working days. This level of road usage is consistent with the levels of usage for “Class B Expressways”, Major Roads, and Local Roads as described in the County General Plan Circulation Element. Therefore, the proposed Project will not exceed, either individually or cumulatively, a level of service standard established by the county for designated roads or highways.

The proposed Project includes two round trips between the Project site and Modesto for a period of up to ten working days. This level of road usage is consistent with the levels of usage for “Class B Expressways”, Major Roads, and Local Roads as described in the County General Plan Circulation Element. Therefore, the proposed Project will not result in a change in traffic patterns that result in substantial safety risks.

The proposed Project includes two round trips between the Project site and Modesto for a period of up to ten working days using passenger vehicles or heavy duty trucks that are consistent with the planned usage of the county roadways per the Stanislaus County General Plan Circulation Element.

Therefore, the proposed Project will not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

The proposed Project includes no stopping or parking on County-maintained roads. Within the Project Area, vehicles will be staged out of the access pathway to facilitate adequate emergency access on gravel roads of the Refuge. Therefore, the proposed Project will not result in inadequate emergency access.

The proposed Project includes no stopping or parking on County-maintained roads. Within the Project Area, vehicles will be staged in designated parking locations along gravel roads of the Refuge. Therefore, the proposed Project will not result in inadequate parking capacity.

The proposed Project involves no proposed changes to policies, plans or programs related to alternative transportation. Therefore, the proposed Project does not conflict with adopted policies, plans, or programs supporting alternative transportation.

### Q. Utilities / Service Systems

This Project will have no effect on utilities and service systems.

The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed areas. The proposed Project will not generate any effluent. The revegetation of disturbed areas will minimize any potential water pollution from the site following the ten-day construction period, while the maintenance of permanent native riparian vegetation across the Project Area will reduce sedimentation and pollution associated with landscape-scale drainage from the Project Area and surrounding lands into the future. There are no established wastewater discharge requirements for discharges from Refuge lands for the Central Valley Regional Water Quality Control Board. Therefore, the proposed Project will not exceed any applicable water quality standards of the Central Valley Regional Water Quality Control Board.

The WSID delivers water to over 22,000 acres of irrigated agriculture. The WSID intake canal sits on fee-title USFWS lands held in easement by the WSID for purposes of maintaining access to the WSID's point of diversion of San Joaquin and Tuolumne River water (License Number 003957, Maximum Direct Diversion Rate 262 CFS). Vehicular access across the canal to provide access for the landowner from the north side of the canal to the south side of the canal is a requirement of the easement, but is not provided today.

Maintenance activities undertaken by the WSID to preserve this intake canal include: routine inspection; weed control including grading, discing, and application of pre- and post-emergent herbicide; erosion control and repair; maintain water level instruments; installation, removal and maintenance of log booms; sediment removal; and tree trimming/removal. The canal is bordered on the north and the south by piles of dredge spoils accumulated from maintenance dredging and left in place. The canal is accessed vehicularly along the entirety of both the north and south sides via dirt roads atop the canal banks. The width of the canal and its adjacent dredge spoil piles is approximately 160 to 200 feet.

In 2012, WSID filed a CEQA Notice of Exemption (SCH# 2012018112) for a Main Canal Renovation Project to *"replace existing facilities constructed in circa 1928 with new modern facilities to deliver San Joaquin River water to the WSID service area. The new facilities will replace the existing facilities from the existing Pump Station 1 to a point to the existing Pool 4 of the Main Canal."*

Additionally, in 2011 WSID filed a CEQA Notice of Exemption (SCH # 2011048152) for Intake Maintenance 2011-2025 described as *"the annual routine maintenance, as needed, including grading for removal of accumulative river silt, of the WSID access to pumping Plant No. 1. Silt removal will occur in an area of approximately one quarter (1/4) mile long and encompass approximately 1/3 of an acre area near the District's point of diversion on the San Joaquin River. The project will not start before June 1 and will conclude by August 31, annually, as needed, for a period of 15 years."*

The WSID main intake canal is currently the largest unscreened diversion from the San Joaquin River, and is subject to high levels of sedimentation annually. For these reasons, the WSID is working to develop alternative intake structure designs which allow for fish-screening, and minimize annual maintenance costs while maintaining sustainable deliveries to WSID subscribers. The banks of the WSID main intake canal are built up above grade through disposal of dredge material. These high banks are not engineered levees, but they function to hinder floodwater entrance onto the West Unit of the Refuge during San Joaquin River flood events smaller than 11,000 cubic feet per second (cfs). During high flows of 2006 and 2011, the canal banks breached and the Project Area flooded from the canal. USFWS, USBR, and CDFW are working with WSID through their Central Valley Project Improvement Act (CVPIA) Anadromous Fish Screen Program (AFSP) and CalFed Ecosystem Restoration Program (ERP) to develop alternative intake designs that provide for screening of the intake to prevent fish entrapment and that work collaboratively with the habitat and flood management objectives of the surrounding Refuge. The Project would not impact WSID service activities since the Project will allow flood water to drain the surrounding lands more effectively.

The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed

areas. There is no proposed change to wastewater treatment facilities or expansion of existing facilities related to this Project. The Project is not hydrologically connected to any existing or proposed wastewater treatment facilities, and will not influence the functioning of adjacent wastewater treatment facilities which are located more than 12 miles downstream. Therefore, the Project will not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed areas. There is no proposed change to wastewater treatment facilities or expansion of existing facilities related to this Project. The Project is not hydrologically connected to any existing or proposed wastewater treatment facilities, and will not influence the functioning of adjacent wastewater treatment facilities which are located more than 12 miles downstream. Therefore, the Project will not require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed areas. The proposed Project has no water supply needs. Therefore, the Project has sufficient water supplies available to serve the Project from existing entitlements and resources, and no new or expanded entitlements needed.

The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed areas. The Project has no demand for wastewater treatment services. Therefore, the Project will not result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's likely demand in addition to the provider's existing commitments.

The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed areas. The proposed Project does not include off-site disposal of solid waste materials. Therefore, the Project will not be served by a landfill.

The proposed Project consists of the installation of 3 gated pipes, minimal vegetation removal within the Project footprint and revegetation of disturbed areas. The Project will not generate solid waste. Therefore, the Project complies with federal, state, and local statutes and regulations related to solid waste.

## R. Mandatory Findings of Significance n

a) Does the project have the potential to 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?

*No Impact.* As discussed above, the proposed project would neither impact habitat or wildlife species, nor substantially degrade the quality of the environment. The proposed Project would provide benefits to salmonid species by eliminating the threat of floodwaters that currently remain in the Project Area and reach temperatures that are lethal to fish species. In addition, the proposed Project would benefit riparian habitat in the Project Area by similar means previously discussed. The construction impacts are temporary (10 days) and would not create a significant effect on the environment.

As discussed in Sections A through Q of this Initial Study, the proposed project would not significantly affect the environment nor substantially degrade the quality of the environment. The project proposes add additional drainage pipes in an area that is currently built-out for such features. The following resource areas will experience long-term benefits from implementation of the proposed project: vegetation, wildlife and water quality, as well as impacts associated with flooding will be reduced.

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

*No Impact.* Cumulative environmental effects are multiple individual effects that, when considered together are considerable or compound or increase other environmental impacts. The individual effects may result from a single project or a number of separate projects and may occur at the same place and point in time or at different locations and over extended periods of time. Cumulative projects identified that are ongoing at present or anticipated in the reasonably foreseeable future include channel maintenance activities within the WPIC.

The proposed Project consists of installation of 3 gated pipes and minimal vegetation removal within the Project footprint. The proposed Project would not cause long-term impacts on the resources in the Environmental Checklist Sections. While impacts for resource areas such as air quality and greenhouse

gas emissions would contribute to more regional impacts, the impacts would not be cumulatively considerable because of the relative small size and temporary duration of the proposed Project. There are no known reasonably foreseeable future projects within the surrounding area of the proposed Project that when considered in conjunction with the ERFA project would compound to increase environmental impacts. Therefore, cumulative impacts would be less than significant.

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

*Less Than Significant.* The Project would include measures that would reduce the potential for accidental release of hazardous materials stored in the project construction area that could enter nearby waterways and adjacent lands, potentially causing adverse on humans. However, implementation of Avoidance and Minimization Measures would reduce the likelihood of potential impacts.

All impacts to resources in this Initial Study are less than significant or no impact

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## VII. INITIAL STUDY PREPARERS

The Department of Water Resources, Flood Projects Office and River Partners prepared this IS/ND. The following DWR and River Partners staff participated in its preparation.

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# APPENDIX A
# CEQA INITIAL STUDY CHECKLIST

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to Projects like the one involved (e.g., the Project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on Project-specific factors as well as general standards (e.g., the Project will not expose sensitive receptors to pollutants, based on a Project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as Project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. (Cal. Code Regs., tit. 14, §15063(c)(3)(D)). In this case, a brief discussion should identify the following:

a) Earlier Analysis Used. Identify and state where they are available for review.
b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the Project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances).

Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a Project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

a) the significance criteria or threshold, if any, used to evaluate each question; and

b) the mitigation measure identified, if any, to reduce the impact to less than significance

| | **Potentially Significant Impact** | **Less Than Significant with Mitigation Incorporated** | **Less Than Significant Impact** | **Beneficial or No Impact** |
|---|---|---|---|---|
| **I. AESTHETICS** -- Would the Project: | | | | |
| a) Have a substantial adverse effect on a scenic vista? | | | | X |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | | | | X |
| c) Substantially degrade the existing visual character or quality of the site and its surroundings? | | | | X |
| d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | | | | X |
| ***Summary:*** *The Project would enhance local aesthetics by enhancing natural vegetation on previously degraded weedy lands. The landscape is topographically flat and sight distance is limited. The Project will not affect daytime or nighttime views in the area.* | | | | |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | Beneficial or No Impact |
|---|---|---|---|---|
| **II. AGRICULTURE RESOURCES:** In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. 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? | | | | X |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | | | | X |
| c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use? | | | | X |
| ***Summary:*** *The Project Area does not host farmlands, and farming uses are prohibited by the terms of underlying Conservation Easements held by the USDA NRCS. The Project may have a positive effect on surrounding agricultural lands uses through improved control of noxious weeds, improved water quality as a result of biofiltration of agricultural drainage by native permanent vegetation, and reduced sedimentation in the San Joaquin River as a result of slowing flow velocities causing some suspended sediments to settle out of the flow.* | | | | |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | Beneficial or No Impact |
|---|---|---|---|---|
| **III. AIR QUALITY** -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Project: | | | | |
| a) Conflict with or obstruct implementation of the applicable air quality plan? | | | | X |
| b) Violate any air quality standard or contribute substantially to an existing or Projected air quality violation? | | | X | |
| c) 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)? | | | X | |
| d) Expose sensitive receptors to substantial pollutant concentrations? | | | | X |
| e) Create objectionable odors affecting a substantial number of people? | | | | X |
| ***Summary:*** *The Project does not conflict with any air quality plans or standards and will not increase criteria pollutants, pollution concentrations, exposure of sensitive receptors or objectionable odors. The Project falls below the thresholds for significance defined by the San Joaquin Valley Air Pollution Control District regarding criteria pollutants, ambient air quality, and odors.* | | | | |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | Beneficial or No Impact |
|---|---|---|---|---|
| **IV. BIOLOGICAL RESOURCES** -- Would the Project: | | | | |
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? | | | | X |
| 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 US Fish and Wildlife Service? | | | | X |
| c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | | | | X |
| 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? | | | | X |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | | | | X |
| 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? | | | | X |
| ***Summary:***<br>*The Project will enhance wildlife habitat for native wildlife by improving flow conditions for migrating salmonids.* | | | | |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | Beneficial or No Impact |
|---|---|---|---|---|
| **V. CULTURAL RESOURCES** -- Would the Project: | | | | |
| a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5? | | | | X |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? | | | | X |
| c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | | | | X |
| d) Disturb any human remains, including those interred outside of formal cemeteries? | | | | X |
| ***Summary:*** *Literature search for historic or cultural resources has resulted in no known records.* | | | | |
| **VI. GEOLOGY AND SOILS** -- Would the Project: | | | | |
| a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: | | | | |
| i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | | | | X |
| ii) Strong seismic ground shaking? | | | | X |
| iii) Seismic-related ground failure, including liquefaction? | | | | X |
| iv) Landslides? | | | | X |
| b) Result in substantial soil erosion or the loss of topsoil? | | | | X |
| 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? | | | | X |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | | | | X |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | Beneficial or No Impact |
|---|---|---|---|---|
| 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? | | | | X |
| ***Summary:***<br>*The Project Area does not support expansive or erosive soils, known fault lines, or other geological hazards.* | | | | |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | Beneficial or No Impact |
|---|---|---|---|---|
| **VII. GREENHOUSE GAS EMISSIONS / CLIMATE CHANGE** -- Would the Project: | | | | |
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | | | X | |
| b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | | | | X |
| ***Summary:*** *The Project's greenhouse gas emissions fall below the thresholds of significance defined by the Sacramento Air Quality Management District. The Project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing emissions of greenhouse gases.* | | | | |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | Beneficial or No Impact |
|---|---|---|---|---|
| **VIII. HAZARDS AND HAZARDOUS MATERIALS** -- Would the Project: | | | | |
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | | | | X |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | | | | X |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | | | | X |
| 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? | | | | X |
| 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? | | | | X |
| f) For a Project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area? | | | | X |
| g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | | | | X |
| h) 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? | | | | X |
| ***Summary:***<br>*The Project involves no hazards or hazardous materials.* | | | | |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | Beneficial or No Impact |
|---|---|---|---|---|
| **IX. HYDROLOGY AND WATER QUALITY** -- Would the Project: | | | | |
| a) Violate any water quality standards or waste discharge requirements? | | | | X |
| b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? | | | | X |
| c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? | | | X | |
| d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? | | | X | |
| e) 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? | | | | X |
| f) Otherwise substantially degrade water quality? | | | | X |
| g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? | | | | X |
| h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows? | | | | X |
| i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? | | | | X |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | Beneficial or No Impact |
|---|---|---|---|---|
| j) Inundation by seiche, tsunami, or mudflow? | | | | X |
| ***Summary:*** *The Project will positively affect flood inundation patterns within the Project Area and its vicinity. Hydraulic analysis and coordination with the Central Valley Flood Protection Board is underway to ensure that the Project is consistent with the management of the designated floodway.* | | | | |
| **X. LAND USE AND PLANNING** - Would the Project: | | | | |
| a) Physically divide an established community? | | | | X |
| b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | | | | X |
| c) Conflict with any applicable habitat conservation plan or natural community conservation plan? | | | | X |
| ***Summary:*** *The Project supports the goals of the Comprehensive Conservation Plan for the San Joaquin River National Wildlife Refuge and is compatible with numerous overlapping conservation plans including the Regional Flood Management Plan for the Mid San Joaquin River, the Central Valley Joint Venture Implementation Plan, and the San Joaquin River Restoration Program.* | | | | |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | Beneficial or No Impact |
|---|---|---|---|---|
| **XI. MINERAL RESOURCES** -- Would the Project: | | | | |
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | | | | X |
| b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? | | | | X |
| ***Summary:*** *The Project will not alter mineral resources on the site.* | | | | |
| **XII. NOISE** -- Would the Project result in: | | | | |
| a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | | | | X |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | | | | X |
| c) A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project? | | | | X |
| d) A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project? | | | | X |
| 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 expose people residing or working in the Project area to excessive noise levels? | | | | X |
| f) For a Project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels? | | | | X |
| ***Summary:*** *The Project will have no effect on noise levels.* | | | | |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | Beneficial or No Impact |
|---|---|---|---|---|
| **XIII. POPULATION AND HOUSING** -- Would the Project: | | | | |
| a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | | | | X |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | | | | X |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | | | | X |
| ***Summary:*** *There is no impact to population or housing associated with the Project.* | | | | |
| **XIV. PUBLIC SERVICES** | | | | |
| a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: | | | | |
| Fire protection? | | | | X |
| Police protection? | | | | X |
| Schools? | | | | X |
| Parks? | | | | X |
| Other public facilities? | | | | X |
| ***Summary:*** *The Project will reduce local and regional reliance on emergency response efforts related to flooding.* | | | | |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | Beneficial or No Impact |
|---|---|---|---|---|
| **XV. RECREATION** | | | | |
| a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | | | | X |
| b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | | | | X |
| **Summary:** *The Project may enhance the recreational utility of the site for wildlife viewing. However, this passive recreational use is not expected to lead to accelerated deterioration of the facility.* | | | | |
| **XVI. TRANSPORTATION/TRAFFIC** -- Would the Project: | | | | |
| a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)? | | | | X |
| b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways? | | | | X |
| c) Result in a change in air traffic patterns, including either an increase in traffic levels that results in substantial safety risks? | | | | X |
| d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | | | | X |
| e) Result in inadequate emergency access? | | | | X |
| f) Result in inadequate parking capacity? | | | | X |
| g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)? | | | | X |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | Beneficial or No Impact |
|---|---|---|---|---|
| ***Summary:***<br>*The Project will have no influence on traffic or circulation.* | | | | |
| **XVII. UTILITIES AND SERVICE SYSTEMS** -- Would the Project: | | | | |
| a) Exceed wastewater treatment requirements of the Central Valley Regional Water Quality Control Board? | | | | X |
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | | | | X |
| c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | | | | X |
| d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed? | | | | X |
| e) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's Projected demand in addition to the provider's existing commitments? | | | | X |
| f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs? | | | | X |
| g) Comply with federal, state, and local statutes and regulations related to solid waste? | | | | X |
| ***Summary:***<br>*The Project will have no influence on wastewater treatment facilities.* | | | | |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | Beneficial or No Impact |
|---|---|---|---|---|
| **XVIII. MANDATORY FINDINGS OF SIGNIFICANCE** | | | | |
| a) Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | | | | X |
| 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)? | | | | X |
| c) Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | | | | X |
| **Note:** Authority cited: Sections 21083 and 21087, Public Resources Code. Reference: Sections 21080(c), 21080.1, 21080.3, 21082.1, 21083, 21083.3, 21093, 21094, 21151 | | | | |

# APPENDIX B
# PROJECT'S ROAD CONSTRUCTION EMMISSIONS MODEL RESULTS

Assumptions and CalEEMod Inputs Used for Project Construction Emissions Estimates

| Input Type | Input |
|---|---|
| Construction Year | 2016 |
| County | Stanislaus |
| Land Use Setting | Rural |
| Land Use Type | Recreational |
| Land Use Square Footage | 10,000sf |
| Grading (CalEEMod Phase) | 01/25/2016 – 02/05/2016; Construction Equipment to be used: (1) rubber-tired Dozer 255 hp, (2) Tractor/Loader/Backhoe 97 hp; Assumed number of worker-trips: 20 |

**Welcome to the Road Construction Emissions Model, Version 7.1.5.1**

**User Instructions**

This spreadsheet system contains the following individual worksheets:

1. This worksheet of User Instructions
2. Emission Estimates
3. Data Entry
4. EMFAC2011
5. OFFROAD Convert
6. OFFROAD HP & LF
7. OFFROAD EF

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

*Changes from previous version of Road Construction Emissions Model*

**(Version 7.1.4 to 7.1.5) (updated by SMAQMD 12/11/13 with assistance from ENVIRON Corporation)**

1) Grubbing and Land Clearing Phase calculation of active months in 2007, 2017, 2019 fixed.
2) Soil Hauling Emissions calculation to select override if it exists for round trips/day.
3) Worker Commute Emissions calculation of starting and hot soak emissions; drainage phase $PM_{10}$ emission rate.
4) Water Truck Emissions calculation to select number of months for Grubbing and Land Clearing Phase; maximum acreage/day after 2025.

**(Version 6.3.2 to Version 7.1.0, 7.1.1, 7.1.2, 7.1.3 & 7.1.4) (updated by SMAQMD 8/2/13)**

1) EMFAC2011 emission factors added (previous EMFAC versions dropped).
2) OFFROAD2011 emission factors added (and fixed error).
3) OFFROAD2007 for categories not in OFFROAD2011 (and fixed error)
4) Project length changed to include calendar years 2009 through 2025.
5) Average Offroad HP by Equipment Type calculation updated and corrected
6) Load Factor Adjustment deactivated (default load factors already incorporated in ARB's calculation of emission factors)
7) Crawler Tractor equipment added to model
8) Air Compressors ROG & Default Excavators calculation on Data Entry sheet corrected.
9) Default equipment list updated
10) Corrections to Worker Commute Emissions calculations

The Emission Estimates worksheet calculates a project's emissions in pounds per day (and kilograms per day) by project phase and tons (and megagrams) over the entire construction period.
The worksheet can be used to estimate emissions for both vehicle exhaust and fugitive dust. The methodology used to estimate fugitive dust emissions is a simplified methodology involving estimates of the maximum area (acreage) of land disturbed daily. Detailed fugitive dust emission estimates associated with individual materials handling operations and/or activity/vehicle types cannot be conducted with this version of the model.
The Emission Estimates worksheet cannot be modified directly, it is a protected worksheet. It can only be modified indirectly by entering information for the project in selected areas of the Data Entry worksheet.
The last four of these worksheets - EMFAC2011, OFFROAD Convert, OFFROAD HP & LP, and OFFROAD EF - cannot be modified by the user. They are protected worksheets.
Even though all or portions of several worksheets are protected, the individual formulas used in the calculations can be seen by the user.
The Data Entry worksheet includes several areas that can be modified by the user.
User instructions in the Data Entry worksheet are highlighted in red.
On the Data Entry worksheet, the user has two options for entering project data: required data and optional data. Required data is entered in the data input section (yellow cells). That required data is then used by the worksheet to calculate default values for the project.
The user can override the default values (blue cells) calculated for a project and is encouraged to do so if project specific information is available. Due to the difficulty in developing reliable default values for road construction projects, the user is encouraged to enter as much site specific information as is available for the project being analyzed.
The Data Entry Worksheet also includes a button that allows the user to clear previously entered data. This button is found just at the top of and to the right of the data entry portion of the worksheet.
When projects are discontinuous, the user must make adjustments to the spreadsheet manually, since the program cannot be setup to anticpate unexpected project delays.

#VALUE! <- This error message may occur during use of the spreadsheets. This occurs whenever the user enters a non numeric value, including a space character, into a cell that is used to calculate a numeric value. Consequently, to erase values entered into the spreadsheets, use the delete key instead of the space bar!

Note: Information in this worksheet is based on conversations with knowledgeable individuals at the Sacramento Metropolitan Air Quality Management District, the California Department of Transportation, the California Air Resources Board, the U.S. EPA, and private industry involved in road construction.
Also, the 26th edition of Walker's Building Estimator's Reference Book (1999) was used in the development of this spreadsheet.
This spreadsheet was prepared by Jones & Stokes and TIAX LLC with the financial support and direction of the Sacramento Metropolitan Air Quality Management District.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT
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TETRA TECH
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Karen Law

## Road Construction Emissions Model, Version 7.1.5.1

| Emission Estimates for -> three amigos<br>Project Phases (English Units) | ROG (lbs/day) | CO (lbs/day) | NOx (lbs/day) | Total PM10 (lbs/day) | Exhaust PM10 (lbs/day) | Fugitive Dust PM10 (lbs/day) | Total PM2.5 (lbs/day) | Exhaust PM2.5 (lbs/day) | Fugitive Dust PM2.5 (lbs/day) | CO2 (lbs/day) |
|---|---|---|---|---|---|---|---|---|---|---|
| Grubbing/Land Clearing | - | - | - | - | - | - | - | - | - | - |
| Grading/Excavation | 0.6 | 3.4 | 3.0 | 2.1 | 0.2 | 1.9 | 0.6 | 0.2 | 0.4 | 804.1 |
| Drainage/Utilities/Sub-Grade | - | - | - | - | - | - | - | - | - | - |
| Paving | - | - | - | - | - | - | - | - | - | - |
| Maximum (pounds/day) | 0.6 | 3.4 | 3.0 | 2.1 | 0.2 | 1.9 | 0.6 | 0.2 | 0.4 | 804.1 |
| Total (tons/construction project) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.7 |

Notes: Project Start Year -> 2015
Project Length (months) -> 0
Total Project Area (acres) -> 1
Maximum Area Disturbed/Day (acres) -> 0
Total Soil Imported/Exported ($yd^3$/day)-> 0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

| Emission Estimates for -> three amigos<br>Project Phases (Metric Units) | ROG (kgs/day) | CO (kgs/day) | NOx (kgs/day) | Total PM10 (kgs/day) | Exhaust PM10 (kgs/day) | Fugitive Dust PM10 (kgs/day) | Total PM2.5 (kgs/day) | Exhaust PM2.5 (kgs/day) | Fugitive Dust PM2.5 (kgs/day) | CO2 (kgs/day) |
|---|---|---|---|---|---|---|---|---|---|---|
| Grubbing/Land Clearing | - | - | - | - | - | - | - | - | - | - |
| Grading/Excavation | 0.3 | 1.5 | 1.4 | 1.0 | 0.1 | 0.9 | 0.3 | 0.1 | 0.2 | 365.5 |
| Drainage/Utilities/Sub-Grade | - | - | - | - | - | - | - | - | - | - |
| Paving | - | - | - | - | - | - | - | - | - | - |
| Maximum (kilograms/day) | 0.3 | 1.5 | 1.4 | 1.0 | 0.1 | 0.9 | 0.3 | 0.1 | 0.2 | 365.5 |
| Total (megagrams/construction project) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.4 |

Notes: Project Start Year -> 2015
Project Length (months) -> 0
Total Project Area (hectares) -> 0
Maximum Area Disturbed/Day (hectares) -> 0
Total Soil Imported/Exported ($meters^3$/day)-> 0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

## Road Construction Emissions Model
## Data Entry Worksheet

Version 7.1.5.1

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

| Input Type | | |
|---|---|---|
| Project Name | three amigos | |
| Construction Start Year | 2015 | Enter a Year between 2009 and 2025 (inclusive) |
| Project Type | 1 | 1 New Road Construction<br>2 Road Widening<br>3 Bridge/Overpass Construction |
| Project Construction Time | 0.30 | months |
| Predominant Soil/Site Type: Enter 1, 2, or 3 | 2 | 1. Sand Gravel<br>2. Weathered Rock-Earth<br>3. Blasted Rock |
| Project Length | 0.04 | miles |
| Total Project Area | 0.50 | acres |
| Maximum Area Disturbed/Day | 0.19 | acres |
| Water Trucks Used? | 1 | 1. Yes<br>2. No |
| Soil Imported | 0.00 | $yd^3$/day |
| Soil Exported | 0.00 | $yd^3$/day |
| Average Truck Capacity | 0 | $yd^3$ (assume 20 if unknown) |

**The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.**

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

| Construction Periods | User Override of Construction Months | Program Calculated Months | 2005 | % | 2006 | % | 2007 | % |
|---|---|---|---|---|---|---|---|---|
| Grubbing/Land Clearing | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Grading/Excavation | 0.30 | 0.14 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Drainage/Utilities/Sub-Grade | 0.00 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Totals** | 0.30 | 0.30 | | | | | | |

**NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.**