



# Initial Study/Proposed Mitigated Negative Declaration For the San Joaquin Flood Protection Project Five Critical Erosion Repair Sites



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Attn: Deborah Condon  
Chief, Environmental Support Section  
Department of Water Resources  
Division of Flood Management  
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**DATE:** March, 25, 2009

**TO:** Responsible and Trustee Agencies, Interested Parties, and Organizations

**SUBJECT:** **NOTICE OF AVAILABILITY AND INTENT TO ADOPT AN INITIAL STUDY/PROPOSED MITIGATED NEGATIVE DECLARATION FOR THE SAN JOAQUIN FLOOD PROTECTION PROJECT 2008, FIVE CRITICAL EROSION SITES SAN JOAQUIN RIVER, RIVER MILE (RM) 41.4L, RM 42.1R, RM 42.5R, RM 42.8(A&B)R AND RM 71.5R.**

The California Department of Water Resources (DWR) has directed the preparation of this Initial Study and intends to adopt a Proposed Mitigated Negative Declaration (MND) for the proposed project in compliance with the California Environmental Quality Act (CEQA) and State CEQA Guidelines. DWR is the lead agency for the proposed project under CEQA.

**Project Location:** The proposed project would be located at five locations on the right and left banks (R, L) and levees of the San Joaquin River that are included in the federal San Joaquin and Tributaries Flood Protection Project. The five sites are located at San Joaquin River Miles (RM) 41.4L, RM 42.1R, RM 42.5R, RM 42.8(A&B) R and RM 71.5R. All sites are located in San Joaquin County. Four sites are located southwest of downtown Stockton and the last site is located west of Manteca near the unincorporated community of San Joaquin City.

**Description of the Proposed Project:** DWR is proposing to implement bank protection measures at 5 sites along the right and left (R,L) banks and levees of the federal San Joaquin River and Tributaries Project to prevent ongoing stream bank erosion and would construct the repairs in accordance with the regulations and standards prescribed by the United States Army Corps of Engineers (USACOE) for providing levee protection.. These five sites were identified as being critical and the highest priority for repair in November 2008. They were first identified among over 150 erosion sites initially documented in 2006 in responses to the Governors' Declaration of a State of Emergency for California Levees in February 24, 2006. Continuing encroachment by San Joaquin River into the levee requires immediate remediation to prevent levee failure.

The repair design would maximize slope stability while retaining the essential features of the channel with the repair ends transitioned with revetment gradually tapered to match the existing bankline. Three of the Stockton area sites would incorporate a tidally positioned emergent bench to provide a planted streamside vegetation community to harmonize with the adjacent flora. The remaining Stockton site at RM 42.1R and situated beneath the State Highway 4 Bridge would only involve the repair of existing grouted rock. The last site at RM 71.5 R would incorporate a riparian bench in its design. All sites except RM 42.1R would include clean quarry stone riprap below the mean water surface elevation (tidal or August mean) and rock above these levels with agricultural soil placed within voids and covered with a layer of soil. The repairs will protect-in-place larger vegetation and incorporate where possible on-site mitigation for vegetation or wildlife impacts. No excavation would occur in the channel and construction would occur from landside.

DWR has directed the preparation of an IS/MND on the proposed project in accordance with the requirements of CEQA. An IS/MND describes the project and its potential impacts on the environment and concludes that any potentially significant impacts that may result from the proposed project can be avoided, eliminated, or reduced to a level that is less than significant, by the adoption and implementation of specified mitigation measures.

**Public Review Period:** The IS/MND is being circulated for public review and comment for a review period of 30 days starting March 25, 2009. Written comments should be submitted and received at the following address or via email no later than close of business (4:00 p.m.) on April 23, 2009:

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Copies of the IS/MND may be reviewed at the Cesar Chavez Central Library branch of the Stockton County Library, located at 605 N. El Dorado St, Stockton, CA, during normal business hours and on the DWR's website at: <http://www.water.ca.gov/levees/links>. Your views and comments on how the project may affect the environment are welcomed.

## PROPOSED MITIGATED NEGATIVE DECLARATION

**PROJECT:** San Joaquin Flood Protection Project 2008, Five Critical Erosion Sites San Joaquin River, River Mile (RM) 41.4L, RM 42.1R, RM 42.5R, RM 42.8(A&B)R AND RM 71.5R.

**LEAD AGENCY:** California Department of Water Resources (DWR)

**AVAILABILITY OF DOCUMENTS:** The initial study and proposed mitigated negative declaration (IS/MND) is available for review at the Cesar Chavez Central Library branch of the Stockton County Library, located at 605 N. El Dorado St, Stockton, CA, and on the DWR's, website at: <http://www.water.ca.gov/levees/links>.

**PROJECT DESCRIPTION:** DWR is proposing to implement bank protection measures at 5 sites along the right and left (R,L) banks and levees of the federal San Joaquin River and Tributaries Project to prevent ongoing stream bank erosion and would construct the repairs in accordance with the regulations and standards prescribed by the United States Army Corps of Engineers (USACOE) for providing levee protection.. These five sites were identified as being critical and the highest priority for repair in November 2008. They were first identified among over 150 erosion sites initially documented in 2006 in responses to the Governors' Declaration of a State of Emergency for California Levees in February 24, 2006. Continuing encroachment by San Joaquin River into the levee requires immediate remediation to prevent levee failure.

The repair design would maximize slope stability while retaining the essential features of the channel with the repair ends transitioned with revetment gradually tapered to match the existing bankline. Three of the Stockton area sites would incorporate a tidally positioned emergent bench to provide a planted streamside vegetation community to harmonize with the adjacent flora. The remaining Stockton site at RM 42.1R and situated beneath the State Highway 4 Garwood Bridge would only involve the repair of existing grouted rock. The last site at RM 71.5 R would incorporate a riparian bench in its design. All sites except RM 42.1R would include clean quarry stone riprap below the mean water surface elevation (tidal or August mean) and rock above these levels with agricultural soil placed within voids and covered with a layer of soil. The repairs will protect-in-place larger vegetation and incorporate where possible on-site mitigation for vegetation or wildlife impacts. No excavation would occur in the channel and construction would occur from landside.

**FINDINGS:** An IS has been prepared to assess the proposed project's potential effects on the environment and the significance of those effects. Using the results of the IS, DWR has determined that the proposed project would not have any significant effects on the environment once mitigation measures are implemented. This conclusion is supported by the following findings:

- ▶ The project would result in no impacts to land use and agricultural resources, public utilities and service systems, mineral resources, recreation, and population and housing.
- ▶ The project would result in less-than-significant impacts to air quality, aesthetics, and traffic and circulation.
- ▶ Mitigation would be implemented to reduce potentially significant impacts to less-than-significant levels for biological resources (potential impacts on special-status species), cultural resources (potential discovery of previously unknown resources or human remains during construction), geology and soils (potential erosion), hazards and hazardous materials (potential spills of hazardous substances during construction), hydrology and water quality (potential erosion and spills of hazardous substances during construction), and noise (short-term construction-related noise).
- ▶ Although there are no known cultural resources that might be disturbed, mitigation is included to address

the potential for discovering archaeological and/or human remains during the construction phase of the project.

- ▶ The project would not substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, reduce the number or restrict the range of a special-status species, or eliminate important examples of California history or prehistory.
- ▶ The project would not achieve short-term environmental goals to the disadvantage of long-term environmental goals.
- ▶ The project would not have environmental effects that are individually limited but cumulatively considerable.
- ▶ The project would not have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly.
- ▶ No substantial evidence exists that the project would have a significant negative or adverse effect on the environment.
- ▶ The project incorporates all applicable mitigation measures, as listed below and described in the IS.
- ▶ This MND reflects the independent judgment of the lead agency, DWR.

The following mitigation measures will be implemented by DWR to avoid or minimize potential environmental impacts. Implementation of these mitigation measures would reduce the potential environmental impacts of the proposed project to a less-than-significant level.

- ▶ Mitigation Measure Bio-1: Maintain a 20-Foot Buffer Around Elderberry Shrubs.
- ▶ Mitigation Measure Bio-2: Conduct Pre-Construction Surveys for Special-status Birds and Nesting Raptors.
- ▶ Mitigation Measure Cul-1: Immediately Halt Construction Activities if Any Cultural Materials Are Discovered.
- ▶ Mitigation Measure Cul-2: Immediately Halt Construction Activities if Any Human Remains Are Discovered.
- ▶ Mitigation Measure Haz-1: Ensure That All Employees Handling Hazardous Materials Are Trained In the Safe Handling and Storage of Hazardous Materials.
- ▶ Mitigation Measure Hydro-1: Prepare a Storm Water Pollution Prevention Plan.
- ▶ Mitigation Measure Noise-1: Maintain and Equip Construction Equipment with Noise Control Devices.
- ▶ Mitigation Measure Noise-2: Limit Construction to the Hours of 6:00 a.m. to 8:00 p.m.
- ▶ Mitigation Measure Noise-4: Designate a Disturbance Coordinator to Receive All Public Complaints.

A copy of the IS/MND is attached. Questions or comments regarding this IS/MND may be addressed to:

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Division of Flood Management  
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Email: [dcondon@water.ca.gov](mailto:dcondon@water.ca.gov)

In accordance with Section 21082.1 of the California Environmental Quality Act, DWR has independently reviewed and analyzed the initial study and proposed mitigated negative declaration for the proposed project and finds that the initial study and proposed mitigated negative declaration reflect the independent judgment of DWR. The lead agency further finds that the project mitigation measures will be implemented as stated in the mitigated negative declaration.

I hereby approve this project:

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Michael Inamine  
Chief of the Levee Repairs and Floodplain Management Office  
California Department of Water Resources

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Date

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## ABBREVIATIONS AND ACRONYMS

ADT	average daily traffic
AG	Agriculture
AQAP	Air Quality Attainment Plan
ARB	California Air Resources Board
BMP	best management practices
CAA	Clean Air Act
CAAA	Clean Air Act amendments
Cal OSHA	California Occupational Health and Safety Administration
Cal/EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCIC	Central California Information Center
CCR	California Code of Regulations
CDMG	California Division of Mines and Geology
Central Valley RWQCB	Central Valley Regional Water Quality Control Board
CEQA	California Environmental Quality Act
Cfs	cubic feet per second
CHP	California Highway Patrol
CNDDB	California Natural Diversity Database
CNEL/L <sub>dn</sub>	Community Noise Equivalent and Day-Night noise levels
CNPS	California Native Plant Society
CO	Carbon monoxide
CR	County Road
CRHR	California Register of Historic Resources
CVFPB	Central Valley Flood Protection Board
CWA	Clean Water Act
CY	cubic yards
dBA	A-weighted decibels
DFG	California Department of Fish and Game
DOC	California Department of Conservation
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EPA	U.S. Environmental Protection Agency
ESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FPD	Fire Protection District
GHG	Greenhouse Gas
HCP	Habitat Conservation Plan
HTRW	hazardous, toxic, or radioactive waste
I-5	Interstate 5
in/sec	inches per second
IS/MND	Initial Study/Proposed Mitigated Negative Declaration
IWM	Instream woody material
MLD	Most Likely Descendent
MRZs	Mineral Resource Zones
NAHC	Native American Heritage Commission
NCCP	Natural Communities Conservation Plan

NMFS	National Marine Fisheries Service
NOI	Notice of Intent
NO X	Nitrogens of oxide
NPDES	National Pollutant Discharge Elimination System
NRCS	U.S. Natural Resources Conservation Service
OAP	Ozone Attainment Plan
OES	Office of Emergency Services
PCB	Polychlorinated Biphenyl
PM <sub>10</sub>	respirable particulate matter with an aerodynamic diameter of 10 micrometers or less
PM <sub>2.5</sub>	respirable particulate matter with an aerodynamic diameter of 2.5 micrometers or less
ppm	parts per million
PPV	peak particle velocity
Proposed project	San Joaquin Flood Protection Project 2008 Five Critical Erosion Repair Sites
RM	River Mile
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SAM	Standard Assessment Methodology
SCS	Soil Conservation Service
SH	State Highway
SIP	State implementation plan
SJ	San Joaquin
SJFPP	San Joaquin Flood Protection Program
SJMSCP	San Joaquin Multi-Species Habitat Conservation and Open Space Plan
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMARA	California Surface Mining and Reclamation Act
SOX	oxides of sulfur
SR	State Route
SWPPP	storm water pollution prevention plan
TMDL	Total Maximum Daily Load
tpy	tons per year
TSS	Total Suspended Solids
USACE	U.S. Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
VELB	Valley elderberry longhorn beetle
vibration decibels	VdB referenced to 1 microinch per second and based on the root mean square
VMT	vehicle miles traveled
µin/sec	1 micro inch per second

# 1 INTRODUCTION

The California Department of Water Resources (DWR) has prepared this Draft Initial Study/Mitigated Negative Declaration (IS/MND) in compliance with the California Environmental Quality Act (CEQA) to address the environmental consequences of the proposed San Joaquin Flood Protection Project - Five Critical Erosion Repair Sites located along the San Joaquin River at River Miles (RM) 41.4 Left Bank (RM 41.4L), RM 42.1 Right Bank (RM 42.1R), RM 42.5 Right Bank (RM 42.5R), RM 42.8 Right Bank (RM 42.8R), and RM 71.5 Right Bank (RM 71.51R) (proposed project) in San Joaquin County, California. DWR is the lead agency under CEQA.

DWR is authorized and funded by the State of California to carry out levee repairs under the San Joaquin Flood Protection Project along the levees of the federal Lower San Joaquin River and Tributaries Project (LSJRTP) that protect areas of the San Joaquin Valley region from the effects of levee failure. DWR is repairing these five critical erosion sites in response to the Governor's direction under Executive Orders S-01-06 of February 24, 2006 and S-18-06 of October 3, 2006.

Following extensive statewide flooding, on February 24, 2006, the Governor declared a state of emergency for California's levee system followed by Executive Order S-01-06 and later S-18-06 that directed DWR to identify and repair critically eroded levee sites on California's levee system to prevent catastrophic flooding and loss of life. With these emergency declarations, Governor Schwarzenegger directed DWR to secure the necessary means to fast-track repairs of critical erosion sites. In addition, California's lengthy environmental permitting process was streamlined without compromising the protection of the important aquatic and terrestrial species inhabiting the river's ecosystem.

DWR immediately established a Critical Erosion Repairs Program with the goal of providing public safety through critical erosion repairs to levees in the Sacramento and the San Joaquin River Basins that are at risk of erosion failure during flood or normal flow conditions. The program includes both the DWR-lead erosion repairs and repairs under the existing Sacramento River Bank Protection Project (SRBPP) through a partnership with the U.S. Army Corps of Engineers. SRBPP is a federally authorized bank protection project that carries out erosion repair along the rivers and channels of the Sacramento River Flood Control System in partnership with the State.

The San Joaquin Flood Protection Project for DWR-lead repairs addresses erosion repairs in the San Joaquin River Basin, primarily along project levees constructed by or incorporated into the federal LSJRTP. The LSJRTP is a congressionally authorized flood control project that includes portions of the San Joaquin River, Old River, Middle River, Calaveras River, Stanislaus River, Fresno River, Kings River, Eastside Bypass, Mariposa Bypass, Chowchilla Canal Bypass, Ash Creek, Bear Creek, Berenda Slough, French Camp Slough, Mormon Slough and Paradise Cut. Unlike the SRBPP, the LSJRTP does not have an active Corps-State partnership.

In September 2006, DWR's Flood Project Integrity and Inspection Branch performed a preliminary reconnaissance survey of the LSJRTP flood control system levees in parallel to Corps and State efforts in the Sacramento River system. Approximately 150 sites in 14 Districts were evaluated including many identified through claims filed by local maintaining agency for flood damage from the April 2006 federally declared flood emergency under the Corps' PL 84-99 flood emergency reimbursement program.

These flood damage assessments were conducted using the Corps' erosion criteria developed by the Corps' Sacramento District and their consultant – Ayres Associates, for the Sacramento River Flood Control System. This ranking methodology serves as a basis for decisions to prioritize and fund levee repairs in both the San Joaquin and Sacramento River Basins. Although initially developed to focus on erosion damage, the methodology

was applied in the San Joaquin system to address other mechanisms of levee damage such as through seepage, underseepage, slope instability, rodent activity, overtopping, and engineering judgment. The evaluation includes historical and maintenance information, hydrologic records, and visual observations from site reconnaissance trips used along with the best existing topographic information to approximate inundation areas and the likelihood of failure. The most severely damaged sites that are determined to likely fail during the next major flood event are designated as *critical*

Based upon these surveys, 15 potential Critical Levee Erosion Sites were initially identified for the LSJRTP. From this list of identified sites, three were repaired by DWR during the late summer and fall of 2008. These three completed repair sites are located at SJ RM 42.3R, Paradise Cut Levee Mile (LM) 3.85L and on Mormon Slough RM 33.0L.

In 2008, the 2006 flood damage assessments and ranking of the remaining sites were more completely evaluated. Only five of the 12 sites initially identified critical sites remained eligible for repair as critical sites within the scope of the Governor's Emergency Declaration. These remaining five critical erosion sites are the subject of this document. These sites are designated as 2008 San Joaquin Flood Protection Project – Five Critical Erosion Repair Sites as they were identified and commitments made for their repair in 2008.

In response to both emergency declarations, DWR developed a plan to accomplish the work that integrated coordination amongst resource agencies, USACE, and DWR through a technical team, a subgroup of DWR's Interagency Flood Management Collaborative Program (IFMCP). This team is composed of representatives from USACE, DWR, U.S. Fish and Wildlife Service, National Marine Fisheries Service, California Department of Fish and Game (DFG), and the State Water Resources Control Board (SWRCB). The team reviews and approves designs and where needed, mitigation plans to ensure this project meets all State and federal environmental requirements under CEQA and CESA and ESA.

This document includes:

- ▶ an IS to satisfy CEQA requirements;
- ▶ an MND to satisfy CEQA requirements; and
- ▶ a notice of availability and intent to adopt an IS/MND for the proposed project.

After completion of the required public review of this document, DWR intends to adopt the MND and the Mitigation Monitoring Reporting Program, and approve the proposed project.

## **1.1 PURPOSE OF THE INITIAL STUDY**

This document is an IS/MND prepared in accordance with CEQA, Public Resources Code §21000 et seq., and the State CEQA Guidelines, Title 14 California Code of Regulations (CCR) Section 15000 et seq. The purpose of this IS/MND is to: (1) determine whether project implementation would result in potentially significant or significant effects to the environment, and (2) incorporate mitigation measures into the project design, as necessary, to eliminate the project's potentially significant or significant project effects or reduce them to a less-than-significant level. An IS/MND presents the environmental analysis and substantial evidence supporting its conclusions regarding the significance of environmental impacts. Substantial evidence may include expert opinion based on facts, technical studies, or reasonable assumptions based on facts. An IS/MND is not intended nor required to include the level of detail used in an EIR.

CEQA requires that all state and local government agencies consider the environmental consequences of projects they propose to carry out, or over which they have discretionary authority, before implementing or approving those projects. As specified in State CEQA Guidelines §15367, the public agency that has the

principal responsibility for carrying out or approving a project is the lead agency for CEQA compliance. DWR has principal responsibility for carrying out the proposed project and is therefore the CEQA lead agency for this IS/MND.

As specified in State CEQA Guidelines Section 15064(a), if there is substantial evidence (such as the results of an IS) that a project, either individually or cumulatively, may have a significant effect on the environment, the lead agency must prepare an EIR. The lead agency may instead prepare an IS if it determines there is no substantial evidence that the project may cause a significant impact on the environment. The lead agency may prepare an MND if, in the course of the IS analysis, it is recognized that the project may have a significant impact on the environment but that implementing specific mitigation measures would reduce any such impacts to a less-than significant level (State CEQA Guidelines Section 15064[f]).

DWR has prepared this IS to evaluate the potential environmental effects of the proposed project and has incorporated mitigation measures to reduce or eliminate any potentially significant project-related impacts. Therefore, an MND has been prepared for this project.

## 1.2 SUMMARY OF FINDINGS

Chapter 3 of this document contains the analysis and discussion of potential environmental impacts of the proposed project. Based on the issues evaluated in that chapter, it was determined that the proposed project would have no impact related to the following issue areas:

- ▶ population and housing,
- ▶ public services, and
- ▶ recreation.

The proposed project would result in less-than-significant impacts on the following issue areas:

- ▶ air quality,
- ▶ aesthetics,
- ▶ mineral resources,
- ▶ land use and agricultural resources,
- ▶ public utilities and service systems, and
- ▶ traffic and circulation
- ▶ greenhouse gases

The proposed project would result in less-than-significant impacts *following* mitigation on the following issue areas:

- ▶ biological resources,
- ▶ cultural resources,
- ▶ geology and soils,
- ▶ hazards and hazardous materials,
- ▶ hydrology and water quality, and
- ▶ noise.

## 1.3 DOCUMENT ORGANIZATION

This document is divided into the following sections:

**Notice of Availability and Intent to Adopt an IS/MND.** The Notice of Availability and Intent to Adopt an IS/MND provides notice to responsible and trustee agencies, interested parties, and organizations of the

availability of this IS, as well as DWR's intent to adopt an IS/MND for the proposed project.

**MND.** The MND, which precedes the IS analysis, summarizes the environmental conclusions and identifies mitigation measures that would be implemented in conjunction with the proposed project. The MND would be signed by a representative of DWR.

**Chapter 1 – Introduction** provides an introduction to the project, purpose of the IS/MND, summary of findings, and organization of this IS/MND.

**Chapter 2 – Project Description.** This chapter describes the purpose of and need for the proposed project, general background, and a description of the proposed project.

**Chapter 3 – Environmental Setting, Impacts, and Mitigation Measures.** This chapter presents an analysis of environmental issues identified in the CEQA Environmental Checklist, and determines if project implementation would result in no impact, a less-than-significant impact, a less-than-significant impact with mitigation incorporated, or a potentially significant impact on the environment in each of the issue areas. If any impacts were determined to be potentially significant, an EIR would be required. For this project, however, mitigation measures have been incorporated where needed, to reduce all potentially significant impacts to a less-than-significant level.

**Chapter 4 – References.** This chapter lists the references used in preparation of this IS/MND.

**Chapter 5 – List of Preparers.** This chapter identifies report preparers.

## 2 PROJECT DESCRIPTION

### 2.1 PROJECT PURPOSE AND NEED

CEQA Guidelines require a clearly written statement of objectives, including the underlying purpose of the Project (Guidelines Sec. 15124[b]). This section summarizes the need for, and purpose and objectives of, the proposed project. This section also includes a description of the proposed project location, features, construction, and operations and maintenance.

#### 2.1.1 PROJECT NEED

DWR is proposing the 2008 San Joaquin Flood Protection Project – Five Critical Erosion Repair Sites located along the federal levees of the Lower San Joaquin River and Tributaries Flood Control Project in San Joaquin County. The sites are all found along the San Joaquin River at River Miles (RM) 41.4 Left Bank (RM 41.4L), RM 42.1 Right Bank (RM 42.1R), RM 42.5 Right Bank (RM 42.5R), RM 42.8 Right Bank (RM 42.8R), and RM 71.5 Right Bank (RM 71.51R) and are within the legal boundaries of the secondary Delta zone. The proposed project would implement bank protection measures to prevent ongoing stream bank erosion and would construct the project in accordance with the regulations and standards prescribed by the United States Army Corps of Engineers (USACE) for providing levee protection. These five were identified as being critical and the highest priority for repair in November 2008 after all San Joaquin area erosion sites initially documented in 2006 were categorized and ranked for urgency of repair.

If current erosion patterns continue, levee integrity and flood protection along these San Joaquin River levees

would be severely compromised. Repair as proposed would serve to protect the integrity of the levee system and provide flood protection for the immediate area on the landside of the levees. Because of the urgency of the proposed project it was determined that construction using rock slope protection with emergent or riparian planting benches would be the most efficient and least environmentally damaging method of protecting the integrity of the levee system.

Four of the sites – SJ RM 41.4L, RM 42.1R, RM 42.5R and RM 42.8Ra&b- are located in the urban industrial area of southwest Stockton in RD 524 on the left bank and in RD 404 on the right bank. Damage from erosion is primarily related to poor levee material and tidal fluctuation. If the erosion at RM 41.4L, continues, a levee failure could inundate the infrastructure of the Stockton Wastewater treatment plant both compromising the major treatment plant for a population of over 285,000 Stockton-area residents and allowing contaminated wastewater to enter Delta waterways damaging the fragile Delta ecosystem and potentially impacting water quality entering the Delta pumps of the State Water Project (SWP) and federal Delta-Mendota Canal. The levee at RM 42.1R protects State Highway 4, a major east-west transportation corridor and continued through the erosion sites at RM 42.5R and RM 42.8R protect the immediately adjacent residential community.

The fifth site, RM 71.5R, is located in a rural unincorporated area southwest of Manteca at the inside of a large bend. The levee toe is being undercut by river currents and exhibits high vertical banks with a continual breaking off of the bank face. Flood fights were initiated on the site both in 1997 and in 2006 to prevent levee failure. A levee breach failure at RM 71.5R in RD 2064 would inundate ct agricultural land and farmsteads as well as a county educational facility at the Durham Ferry at the downstream end of the erosion site. .

## **2.1.2 PROJECT PURPOSE AND OBJECTIVES**

The purpose of the project is to repair flood damage on the levees of the San Joaquin River to protect life and property from potential flooding. The final goal is to maintain levees that will not fail under flood conditions. Key objectives of the project are as follows:

- ▶ Repair critically eroding levee and banks sites in accordance with regulations and standards prescribed by USACE to provide levee protection at critical erosion sites located along the San Joaquin River at River Miles (RM) 41.4 Left Bank (RM 41.4L), RM 42.1 Right Bank (RM 42.1R), RM 42.5 Right Bank (RM 42.5R), RM 42.8 Right Bank (RM 42.8R), and RM 71.5 Right Bank (RM 71.51R) in San Joaquin County, California.
- ▶ construct the repairs before the start of the 2009–10 flood season, and
- ▶ minimize environmental impacts during project construction and operation.

## **2.2 PROPOSED LOCATION**

The proposed project is located within San Joaquin County and along the banks and federal levee of the San Joaquin River. All sites are within the legal boundaries of the Secondary Zones of the Sacramento-San Joaquin Delta. The upper 4 sites are all located in the south west incorporated area of Stockton with an approximate 1.5 mile radius and approximately 45 miles south of Sacramento. Three of the four sites are on the right bank of the San Joaquin River in the incorporated area of Stockton in RD 404 and the fourth site is located on the opposite bank adjacent to the City of Stockton Sewage Detention Ponds in RD 526. These Stockton sites are subject to diurnal tidal fluctuations. The fifth site is located approximately 19 miles south of the other sites in a rural residential area next to the former Durham Ferry State Recreational area, now a San Joaquin County educational site and across the river from the unincorporated community of San Joaquin City. It is less tidally influenced with



## 2.3 PROJECT FEATURES AND CONSTRUCTION

The project footprint consists of the entire area subject to slope protection. The repairs have been designed to maximize slope stability while retaining the essential features of the channel. The repair design includes the major centered repair and end transition with revetment gradually tapered to match the existing bankline. For 4 of the 5 sites, revetment materials would consist of rock riprap below the mean summer or mean tidal water surface, and quarry stone with voids filled with soil above the selected mean water surface elevation. Soil will provide a planting medium to support plant growth. Either a tidal or riparian bench will be constructed to enhance environmental values and provide for on-site mitigation. Construction will be typically carried out using excavators and haul trucks. All construction will be from landside only; no equipment will enter the active stream. No in-water excavation will occur.

See Appendix B for repair footprint and typical sections for all sites. Repair quantities are provided in Table 1.

Project ID	RD	River Mile	Preliminary Repair Information						Temporary . Disturbed Area	
			Length (ft)	In-Water Footprint (AC)	Out of Water Footprint (AC)	Total repair footprint (AC)	Launch Rock (CY)	Rock+ Soil Volume (CY)	Staging Area (AC)	Haul Route (AC)
SJ 41.4L	524	41.4	160	0.28	0.17	0.4	1,200	859	2	Haul route on paved public roads and/ or graveled access roads on levee crown  No disturbance
SJ 42.1R	404	42.1	80	0.06	0.17	0.2	0	1,702	2 (Same staging area for all RD 404 Sites)	
SJ 42.5R	404	42.5	350	0.25	0.30	0.5	1,911	1,806		
SJ 42.8bR	404	42.7	100	0.10	0.12	0.2	933	648		
SJ 42.8aR	404	42.8	700	0.45	0.54	1.0	4,044	3,426		
SJ 71.5R	2064	71.5	2,200	2.48	1.57	4.0	32,000	11,615	2	
<b>Total Quantities –</b>			3,590	3.61	2.86	6.5	40,089	20,056	6	0

**Note:** Site 42.1R under Hwy-4 bridge repair will consist of grouted rock at 1.5: slope to fill the failed patch in the existing grouted riprap.

**Table 1. Repair Quantities**

### 2.3.1 EROSION SITES AT FOUR STOCKTON AREA SITES

#### SJ RM-41.4L:

The proposed repair on this site is intended to fix approximately 160 feet of eroded levee slope adjacent to and upstream of the BNSF Rail Road Bridge. The bank is very steep and associated with poor levee material (Sandy Silt) and subject to tidal fluctuation and eddy formation during high flows causes significant erosion. The repair will include installation of waterside rock slope protection ( $D_{50} = 8$  inch). Clean quarry rock (riprap) will be placed below mean tidal elevation to reinforce the toe of the levee to and provide a platform for an undulating emergent waterside bench constructed outboard of the repaired levee slope at the mean tidal elevation. The emergent bench will have a width of approximately 5' and a slope of 1:10 with underlying rock voids filled with clean sand and covered with 6" of sand. The bench will be vegetated with emergent marsh species. Above mean tidal elevation, rock voids will be filled with agricultural soil and covered with a 9" layer the rock-soil mix to support vegetation for erosion control and/ or necessary onsite environmental mitigation. The lower slope of

the proposed repair will be planted with riparian vegetation and fascine bundles composed of mixed willow species will be embedded in the slope above the emergent bench.

### **SJ RM-42.1R:**

This site is an 80' length patchwork repair of an existing riprap / grouted riprap under the State Route 4 bridge structure. The existing grouted riprap beneath the bridge on the levee is in a deteriorating and sloughed condition. The proposed repair on this site will be limited to the area under the highway bridge and will not extend into the water beyond the existing placed rock. The existing grouted rock will be repaired and supplemented where additional grouted rock is needed. Work will be accomplished during lower tidal periods using rapid curing grout that would involve only dry rock to minimize any in-water disturbance to water quality.

### **SJ RM 42.5R and RD 42.8R (a&b)**

These sites still exhibits some existing riprap at few locations up to low water surface elevations; the levee slopes are steep and are sloughing near toe due to tidal fluctuations and poor materials. SJ RM-42.5R and 42.8R: The proposed repair on these sites intended to fix the eroded levee slope and the repair designs is similar for both sites. RM 42.5R is approximately 350' long while RM 42.8R consists of two sections – section A is 700' long separated by a levee segment that is stable and already rocked. Section B is a shorter section approximately only 100' in length.

Repairs will include installation of waterside rock slope protection ( $D_{50} = 8$  inch) up to design water surface elevation, approximately 10 feet below the top of the levee. . The voids in the rock of slope protection above mean tidal water surface elevation will be filled with agricultural soil and covered with a layer of agricultural soils to support vegetation for erosion control and/ or necessary onsite environmental mitigation. The full slope of the proposed repair will be planted with riparian vegetation and mixed willow species fascine bundles will be embedded in the slope above an undulating emergent bench. The emergent bench with an approximate width of 10' will be constructed outboard of the repaired levee slope at the mean tidal elevation, vegetated with emergent marsh species within a 2' layer of rock with clean sand filled voids and a layer of clean sand.

## **2.3.2 EROSION SITES AT SOUTHERN SITE AT RM 71.5R**

### **SJ RM-71.5R:**

The site exhibits active erosion from undercutting of the highly erodible soils on the outside of a long narrow bend. The emergency riprap windrow placed during 2006 floods appears to be adding to slope instability. There is an existing seepage berm on the landside indicating seepage issues. Many animal burrows are evident near the upstream end.

The proposed repair on this site is intended to control the actively eroding bank slope. The proposed repair will include installation of waterside rock slope protection ( $D_{50} = 8$  inch). The voids in the rock slope protection above mean summer water elevation will be filled with agricultural soil and covered with an agricultural soil layer to support vegetation for erosion control and/ or necessary onsite environmental mitigation. A riparian bench with an approximate width of 10' will be constructed and vegetated above the mean August water elevation and also vegetated upon the slope. Rootwads will be placed at the summer and winter mean elevation to provide fish habitat and sediment accrual and willow fascine bundles will be placed between the rootwads. The waterside edge of the upper berm will be planted to provide tree cover and slopes will be planted with native grasses and shrubs. A 15-foot buffer will be kept clear from where the levee and upper berm meet.

### **2.3.3 CONSTRUCTION EQUIPMENT AND STAGING AREA**

RM 41.4L -The staging area for the project site includes an approximate 0.2 acre area along the top of the levee just for construction parking where the road widens, approximately 100' upstream of the start of construction in addition to a larger 1.8 acres area approximately ½ mile upstream for storage of construction equipment and material stockpiles. Figure 2

RM 42.1R, RM 42.5 R and RM 42.8 - This staging area would be located on a 2-acre open field on the landside of the levee just upstream of the Highway 4 Bridge. It will be used as a storage area for construction equipment and material stockpiles for all three sites. A temporary ramp will be used for accessing the top of the levee. Figure 3.

RM71.5R – The staging area of equipment and stockpiling of materials for this site would be located on a 2-acre open field just downstream of the end of the site transition and the access ramp for the site. The waterside berm above the erosion scarp where it is wide enough will be used for temporary staging of materials prior to placement.

The following heavy equipment would likely be used for construction at each repair sites:

- ▶ 1 excavator,
- ▶ 1 loader (large),1 grader,
- ▶ 1 dozer (small),
- ▶ 1 scraper (small),
- ▶ 4 dump trucks,
- ▶ 2 compactors,
- ▶ 1 water truck, and
- ▶ 2 pickups.

Approximately 3,000 round trips for dump trucks would be needed for total construction of the proposed project for an estimated 32 round trips per day. In addition, there would be up to 43 additional round trips created by construction workers commuting to and from the project site each day.

### **2.3.3 CONSTRUCTION SCHEDULE**

Construction of the repair sites would take approximately 2 ½ months and would occur between August 15 and October 31, 2009 with additional landscaping work that may continue through December 15, 2009. .

## **2.4 PROJECT OPERATIONS AND MAINTENANCE**

The operation and maintenance of the proposed repairs sites would be similar to the operation and maintenance of the existing San Joaquin River levees. These levees are maintained by local reclamation districts. Maintenance activities may include, but are not limited to, visual inspections of the levee, burning and/or mowing on the levee to minimize vegetation, and sealing holes in the levees caused by rodents.



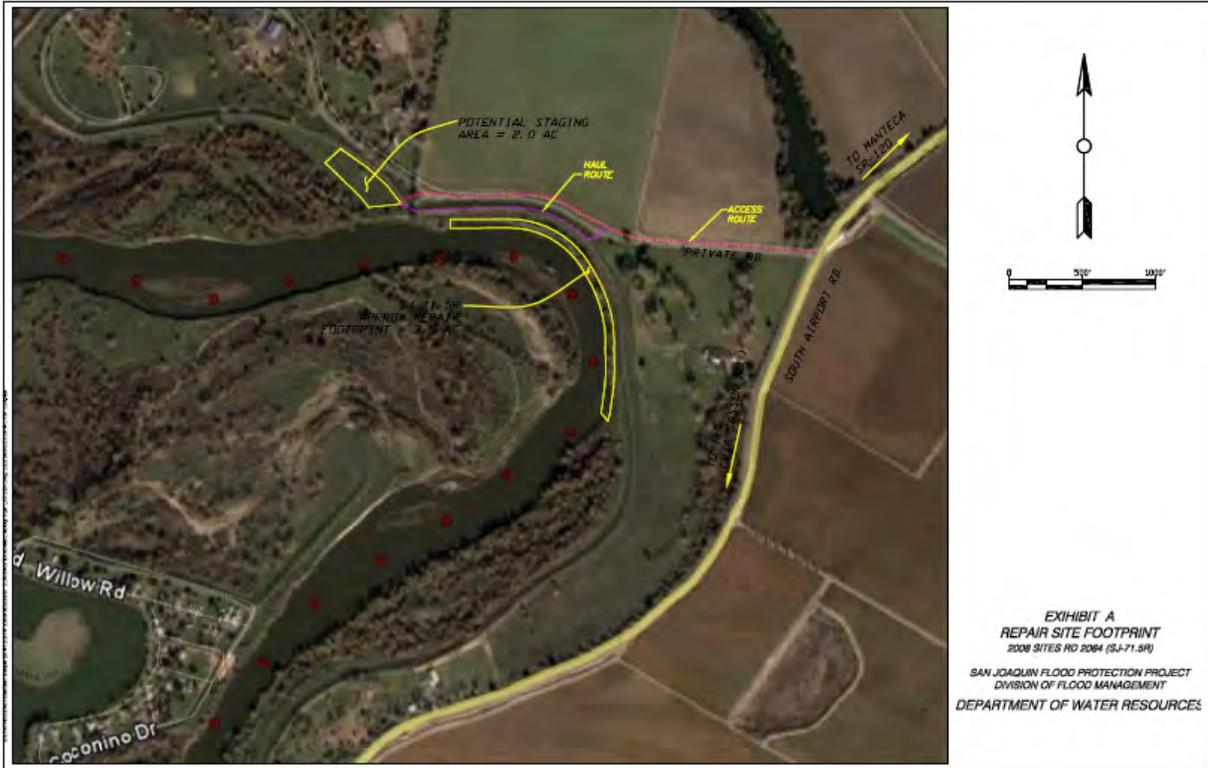


Figure 4. Project Location, Haul Routes and Area of Potential Effect – SJ RM 71.5 R

**3 ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES**

<b>PROJECT INFORMATION</b>		
1.	Project Title: San Joaquin Flood Protection Project , Five Critical Erosion Sites San Joaquin River, River Mile (RM) 41.4L, RM 42.1R, RM 42.5R, RM 42.8(A&B)R AND RM 71.5R.	
2.	Lead Agency Name and Address: California Department of Water Resources 2825 Watt Avenue, Suite 100 Sacramento, CA 95821	
3.	Contact Person and Phone Number: Deborah Condon – 916/574-1426	
4.	Project Location: San Joaquin River near Stockton at RMs 41.4L, 42.1R, 42.5R, 42.8R(A&B) and S/W of Manteca at RM 71.5R., in San Joaquin County.	
5.	Project Sponsor’s Name and Address: California Department of Water Resources 2825 Watt Avenue, Suite 100 Sacramento, CA 95821	
6.	General Plan Designation: RM 41.4L – City, RM 42.4, 42.8 – City, RM 71.5 – Open Space/Resource Conservation (OS/RC)	
7.	Zoning: RM 41.4L – City, RM 42.4, 42.8 – City RM 71.5 -Agricultural 40 (A-40)	
8.	Description of Project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.) The proposed project would consist of five erosion repairs for a total length of 3,590Ft constructed at critical erosion sites RM 41.4L, RM 42.1R, RM 42.5R, RM 42.8R and RM 71.5R along the banks of San Joaquin River in Stockton and southwest of Manteca, San Joaquin County.. One site at 42.1R is a repair under HWY 4 bridge of only grouted slope protection. Repairs at all other sites will include installation of waterside rock slope protection. Voids in the rock of slope protection above mean tidal or August mean surface elevation will be filled and covered with soil to support vegetation for erosion control and/ or necessary onsite environmental mitigation. An emergent tidal bench with marsh vegetation will be constructed at four Stockton area sites and a riparian bench constructed at the RM 71.5R site. The slopes of the proposed repair will be vegetated.	
9.	Surrounding Land Uses and Setting: (Briefly describe the project’s surroundings) RM 41.4L – urban/industrial sewage ponds, BNSF railroad bridge; RM 42.1R, RM 42.5R and RM 42.8R – urban/residential/ golf course, Hwy 4 Bridge. RM 71.5R - Agricultural crop lands, orchards, and farmsteads and county educational facility at Durham Ferry.	
10:	Other public agencies whose approval is required: (e.g., permits, financing approval, or participation agreement) Central Valley Regional Water Quality Control Board (SWPPP), DFG (1600), DFG (CESA), USACE (401), USFWS and NMFS (ESA), State Lands Commission (lease amendment), CVFPB (encroachment permit),	
<b>ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:</b>		
The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.		
<input type="checkbox"/> Aesthetics	<input type="checkbox"/> Agriculture Resources	<input type="checkbox"/> Air Quality
<input type="checkbox"/> Biological Resources	<input type="checkbox"/> Cultural Resources	<input type="checkbox"/> Geology / Soils
<input type="checkbox"/> Hazards & Hazardous Materials	<input type="checkbox"/> Hydrology / Water Quality	<input type="checkbox"/> Land Use / Planning
<input type="checkbox"/> Mineral Resources	<input type="checkbox"/> Noise	<input type="checkbox"/> Population / Housing
<input type="checkbox"/> Public Services	<input type="checkbox"/> Recreation	<input type="checkbox"/> Transportation / Traffic
<input type="checkbox"/> Utilities / Service Systems	<input type="checkbox"/> Mandatory Findings of Significance	<input type="checkbox"/> None with Mitigation

## 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. Section 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:

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

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

## EVALUATION OF ENVIRONMENTAL IMPACTS

<b>AESTHETICS</b>	<b>THRESHOLDS OF SIGNIFICANCE</b>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>I.</b>	<b>Aesthetics. Would the project:</b>				
	a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This section analyzes the potential effects of the proposed project on aesthetic resources and recommends mitigation as necessary.

### ENVIRONMENTAL SETTING

#### Stockton Area Sites – SJ RM 41.4L, RM 42.1R, RM 42.5R and RM 42.8R(a&b)

These four sites are located in the urban industrial area of southwest Stockton in RD 524 on the left bank and in RD 404 on the right bank. There are no State-designated visual resources within or near the project site. Nighttime views within the four project sites are dependant on proximity to highway lighting, lighting associated with industrial uses such as treatment plant operations and warehousing. The sites are less influenced by urban lighting sources as one proceeds south as the golf course on the landside of the levee does not typically operate at night.

SJ RM 41.4R is characterized by industrial areas to the east and north and the sewage treatment ponds to the west. A Bascule-type railroad bridge crosses the San Joaquin River and tracks form high ground immediately to the north. Sparse areas of emergent vegetation are located on the waterside and isolated native and non-native riparian areas grow in landside areas between the pipeways and canals associated with the sewage ponds and treatment facilities as shown in Figure 5.

RM 42.1R is located directly below the Highway 4 bridge crossing the San Joaquin River and is almost devoid of vegetation as shown in figure 6. A residential community lies to the east of the site, the river to the west and to the north are industrial warehouses and businesses. To the south is the City of Stockton public golf course, the Van Buskirk Park Golf Course. Highway 4 is not designated as a State or County Scenic Highway.



**Figure 5. Wastewater Pond Piping and Riparian Habitat on landside of RM 41.4L**



**Figure 6. RM 42.1 Repair Site below Hwy 4 Garwood Bridge**

RMs 43.5R and 42.8R are just upstream and within view of RM 42.1 and on the waterside due west of the Van Buskirk Park Golf Course beyond which is residential housing. The sparse levee slope vegetation is located mainly at the toe of the levee at the water line and is a mix of native and nonnative senescent tree with undercut roots and willows and emergent reeds and sedges. One residence is located across the river channel amid agricultural row crops. Walker Creek branches off the San Joaquin River immediately south of the site. Access to the road atop the levee is restricted with no public access.

#### **Southern Site – SJ RM 71.5R Durham Ferry**

The fifth site, at Durham Ferry, RM 71.5R, is located in a rural unincorporated area west of Ripon and east of Tracy at the outside of a large bend about 1.6 miles north of the confluence of the San Joaquin River and the Stanislaus River which marks the county line. The levee toe is being undercut by river currents and exhibits high vertical banks with a continual breaking off of the bank face and the visual view of the site from across the river looking east is dominated by large piles of unvegetated rock riprap remaining from 2006 flood fights. About half of the site length no longer has a fringe of riparian habitat as direct flows into the bend have resulted in erosion undercutting the banks with resulting loss of trees. However, a narrow bank of older riparian trees remains on the upstream half of the site where the flows are less direct. Directly across from the site is a low densely forested floodplain that is partially submerged under higher winter flows. Directly downstream of the site is the former 209-acre Durham Ferry State Park which was deeded to San Joaquin County in 1997 and is now an educational facility with a high school and middle school and environmental and farming education facilities that includes class rooms, barns and sites for outdoor recreation. The former park area is not opened to the public.

The surrounding area includes a gun range to the southeast, rural residences and row crop and grazing lands and the small unincorporated community of San Joaquin City less than one mile to the west. The repair site is not visible from any housing or from the public using adjacent roads but does attract occasional use by fishermen who access the site by walking from the landside of the levee and over the crown to access the river.

#### **DISCUSSION**

**a) Have a substantial adverse effect on a scenic vista?**

**Less-than-Significant Impact.** At the four urban, industrial Stockton area sites, construction of the repairs would be on the waterside and not be visible from any scenic vistas. Construction of the levees repairs would not substantially change the views within the project area and would not change views from any scenic vistas. Though the construction activity would temporarily create an adverse effect for the very short term, the addition of emergent and riparian benches would increase the streamside vegetation and increase the scenic vista by greening the sites.

At the more southern RM 71.5R site, the scenic vista as viewed from the opposite bank already included large amounts of emergency rock placed in 2006 to prevent levee failure. The steep eroding banks have lost about 70 percent of riparian vegetation through active erosion and exhibit a bare vertical bank face. The repair will be connected into existing Corps of Engineer rock at the most upstream end. The scenic value will improve with the plantings on the riparian bench and lower slopes.

Therefore, this impact would be less than significant.

**b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?**

**No Impact.** None of the sites are located along a scenic highway designation. All native trees with trunks at breast height diameter (bhd) would be protected in place. Although repairs would change the views at the project site and vicinity, there are no views of a scenic highway in the project vicinity. Therefore, no impact would occur.

**c) Substantially degrade the existing visual character or quality of the site and its surroundings?**

**Less-than-Significant Impact.** The levee repairs would improve the existing industrial visual character of the Stockton project area and replicate the remnant tidal emergent plant communities found in adjacent areas. The levee repairs and associated landscaping would be consistent with the riverine and agricultural surrounding views in the RM 71.5R area. The levee at LM 42.1R would differ slightly from other levees in the project area, in that it is only a repair of existing grouted rock with no intrinsic visual quality or change to what is currently visually present.

The repairs would not substantially alter existing views of the project area; therefore, the proposed project would have a less-than-significant impact on visual resources.

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

**No Impact.** Repair of levees would not generate or introduce any new sources of nighttime lighting or glare. Therefore, no impact would occur.

## LAND USE AND AGRICULTURAL RESOURCES

THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>IX. Land Use and Planning.</b>				
Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>II. Agricultural Resources.</b>				
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997, as updated) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland.				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

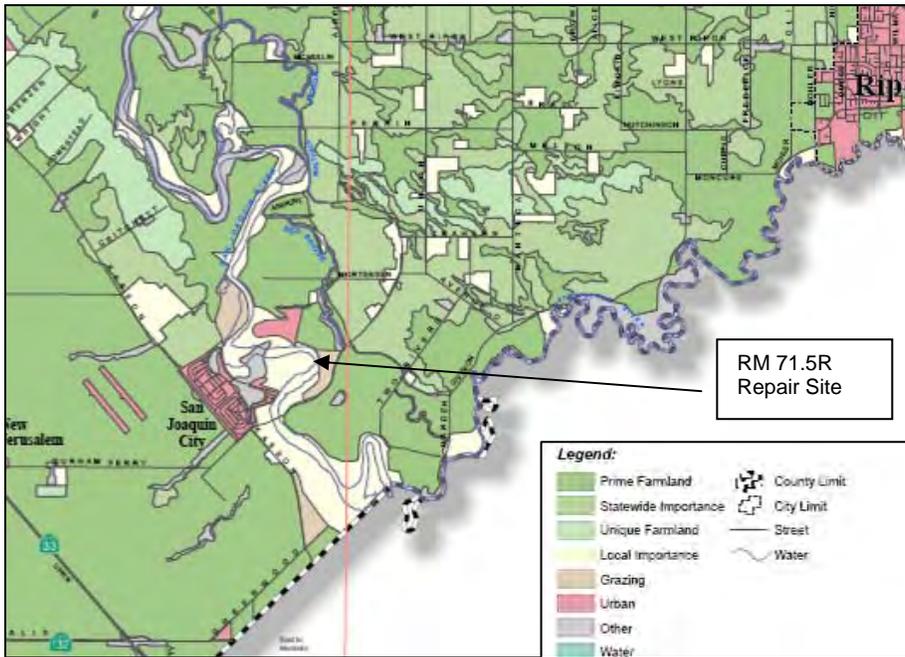
This section analyzes the potential effects of the proposed project on land use and agricultural resources and recommends mitigation as necessary.

### ENVIRONMENTAL SETTING

The land use analysis is based on a review of agricultural characteristics of lands in the project area; it is further based on consideration of actions that could result in adverse physical changes to the environment or degrade physical attributes that historically supported native riparian habitat and that have supported agricultural production in recent times. Agricultural characteristics include lands designated by the California Department of

Conservation (DOC) as being of prime, unique, or Statewide importance and exhibit relative values of active agricultural operations in the study area and local counties.

The information presented on land uses and agriculture is primarily based on review of existing documents and other relevant information including: There is no designated farmland of prime, unique or Statewide importance adjacent to or impacted at any of the Stockton area sites. However, the repair site at RM 71.5R is on the waterside of the levee and across an access road to the Durham Ferry County educational facility from designated prime farmland. Farmland map of the area is below in Figure 7.



**Figure 7. Farmland Mapping for Lands Adjacent to RM 71.5 R**

(From San Joaquin County Geographic Information System Important Farmland 2004)

## LAND USE

The project sites near Stockton will not be discussed as they are not adjacent to any farmland. They are designated as City under both the general plan and by zoning as indicated in the San Joaquin County Assessor's records.

The repair site at RM 71.5 R is located along the waterside of the right levee of the San Joaquin River southeast of the Tracy and southwest of Manteca. It is accessed from Interstate 5 by Kasson Road and S. Airport Road. The surrounding area is mix of unincorporated rural communities and suburban ranchettes and with a few working farmsteads as the site is within growing affordable housing areas for Stockton and even the bay area accessed by I 280 to the west.

The agricultural fields to the east of the site which are designated as Prime Farmland were in fallow condition at the time of our field visit but appear to sustain row crops. The project site is entirely on the waterside with no development. The staging area just north of the access ramp to the levee road is designated as Urban on the County Farmland map and is a fallow open field with ruderal vegetation. On the waterside of the existing levee remnant patches of riparian forest grow on the downstream edge of the upper banks of the river. Lands to the

south of the project site are characterized by grazing areas.

The project site is currently designated as Open Space/Resource Conservation (OS/RC) which is a designation for areas with significant resources that generally are to remain in open space and replaced an older Conservation and Water and Waterways designations. The adjacent farmland to the south and east is designated AG 40 with a 40-acre minimum parcel size.

## DISCUSSION

### LAND USE

#### a) **Physically divide an established community?**

**No Impact.** Implementing the proposed project would not result in the physical division of an existing community. The project area and surrounding vicinity consist of agricultural land with scattered rural residences, ranchettes and the unincorporated community of San Joaquin City. . The proposed project would construct levee repairs that would be consistent with the surrounding farmland, and the proposed project would not create any barriers to community travel or communication. Because the project vicinity contains only a few scattered rural residences, implementation of the proposed project would not physically divide an established community. Therefore, there would be no impact on any existing communities.

#### b) **Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?**

**No Impact.** The land use plan, policy, or regulation document applicable to the project area includes the San Joaquin County General Plan and Municipal Code. Because implementing the proposed project would not involve changing the underlying land uses in the project area, the proposed project would also not conflict with any land use policies of regulations of San Joaquin County. Therefore, there would be no impact related to conflicts with any applicable land use plan, policy, or regulation.

#### c) **Conflict with any applicable habitat conservation plan or natural community conservation plan?**

**No Impact.** The Durham Ferry RM 71.5R project area is within the boundaries of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSHCP or Plan). The purpose of the SJMSHCP will be to promote biological conservation in conjunction with economic and urban development in the plan area. The Plan will describe the measures that local agencies will perform to conserve biological resources, obtain permits for urban growth and public infrastructure projects, and continue to maintain the rich agricultural heritage and productivity of the county. Implementation of the proposed project would not in any way conflict with the provisions or otherwise affect implementation of the Plan as the designation of the repair site as open space and resource conservation (OS/RC) zone will not change and the on-site mitigation landscape measures appears consistent with the SJMSHCP objectives, therefore there would be no impact related to the SJMSHCP.

The proposed project would be in compliance with the land use plans applicable to the project area. The proposed project would not result in a conflict with existing or surrounding land uses, nor would it divide a community. The proposed project would not generate adverse conditions for the adjacent properties and would not diminish or prevent agricultural uses on adjacent lands. Therefore, the proposed project would have no impact on the overall existing land use and planning issues.

## AGRICULTURAL RESOURCES

- 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?**

**No Impact.** None of the proposed five repair projects would convert farmland.

- b) **Conflict with existing zoning for agricultural use or a Williamson Act contract?**

**No Impact.** None of the repair site project areas are zoned for agriculture or in Williamson Act contracts. Erosion repairs are consistent with historic flood control approaches in the project area. The purpose of the repairs is to prevent flood inundation of farmland, so it implements an objective that is supportive of and beneficial to continued agricultural use of the protected lands.

- 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?**

**No Impact.** Erosion repairs would not adversely affect the overall use of the area for agriculture. The proposed project would not stop or hinder the agricultural practices that occur on neighboring properties. The proposed project would not involve land development activities (i.e., residential subdivisions, or commercial or industrial land uses) that would directly or indirectly induce changes in the use of surrounding agricultural land, such as the need for schools, public services, etc. The proposed project would not induce new residential, commercial, or industrial land development activities to occur in the future.

# AIR QUALITY

THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>III. Air Quality.</b>				
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations.				
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f). Conflict with the state goal of reducing greenhouse gas emissions in California to 1990 levels by 2020, as set forth by the timetable established in AB 32, California Global Warming Solutions Act of 2006?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

This section includes a description of ambient air quality conditions, a summary of applicable regulations, and an analysis of potential short-term construction and long-term operational-source air quality impacts of the proposed project.

## ENVIRONMENTAL SETTING

The project sites are all located in San Joaquin County which is under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD), a regional agency responsible for air quality management in eight counties in the San Joaquin Valley Air Basin: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare and portions of Kern County. The SJVAPCD is charged with improving the health and quality of life for residences in the Project area through efficient, effective and entrepreneurial air quality management strategies.

Ozone and particulate matter are the two pollutants that are responsible for the bulk of the Valley’s air quality problems. The district has written attainment plans for these two constituents (2007 Ozone Plan, 2007 PM10 Maintenance Plan and Request for Redesignation; and 2008 PM2.5 Plan). Through measures recommended in these plans, the district was able to receive a designation by the EPA for the federal PM10 standard V (i.e.,

respirable particulate matter with an aerodynamic diameter of 10 micrometers or less) as an attainment basin. However, is still in non-attainment for the parallel State PM10 standard. Ozone is the result of chemical reactions between oxides of nitrogen (NOX) and volatile organic compounds (VOC) in the presence of sunlight. San Joaquin Valley top sources of Nox emissions are mobile sources primarily related to transportation while VOC sources include farming operations consumer products, transportation and oil and gas production.

The San Joaquin Valley is currently designated as a server non-attainment area for the State 1-hour Ozone standard and serious non-attainment for national 8-hour Ozone standards (SJVAPCD, 2008). The San Joaquin Valley is also designated as a non-attainment area with respect to both the State and national PM 2.5 (i.e., respirable particulate matter with an aerodynamic diameter of 2.5 micrometers or less). In proximity to the repair sites, criteria air pollutant concentrations are measured at two monitoring stations in Stockton (Wagner/Holt and Hazelton) and one in Modesto.

**Table 2. San Joaquin Valley Attainment Status**

Pollutant	Designation/Classification	
	<u>Federal Standards</u> <sup>a</sup>	<u>State Standards</u> <sup>b</sup>
Ozone - One hour	No Federal Standard <sup>f</sup>	Nonattainment/Severe
Ozone - Eight hour	Nonattainment/Serious <sup>e</sup>	Nonattainment
PM 10	Attainment <sup>c</sup>	Nonattainment
PM 2.5	Nonattainment <sup>d</sup>	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead (Particulate)	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

<sup>a</sup> See 40 CFR Part 81, <sup>b</sup> See CCR Title 17 Sections 60200-60210. <sup>c</sup> On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM10 National Ambient Air Quality Standard (NAAQS) and approved the PM10 Maintenance Plan. <sup>d</sup> The Valley is designated nonattainment for the 1997 federal PM2.5 standards. EPA released final designations for the 2006 PM2.5 standards in December 2008 (effective in 2009), designating the Valley as nonattainment for the 2006 PM2.5 standards. <sup>e</sup> On April 30, 2007 the Governing Board of the San Joaquin Valley Air Pollution Control District voted to request EPA to reclassify the San Joaquin Valley Air Basin as extreme nonattainment for the federal 8-hour Ozone.

## DISCUSSION

### a). Conflict with or obstruct implementation of the applicable air quality plan?

No Impact. The project sites are within San Joaquin County and are subject to the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). If a project is proposed in a city or county with a general plan that is consistent with the most recently adopted air quality plan, and if the project is consistent with that general plan, then the project is considered to be consistent with applicable air quality plans and policies. The proposed project would be constructed along the federal levee system and would remain consistent with current land use designations and the San Joaquin County General Plan. The proposed project would not conflict with the region's air quality management plans. Therefore, no impact would occur.

**b). Violate any air quality standard or contribute substantially to an existing or projected air quality violation?**

**Less-than-Significant Impact.** The primary concern of the SJVAPCD during construction would be the emissions resulting from dust-generating activities. However, as described in Hydrology and Water Quality sections, the contractor would prepare and implement a SWPPP and construction BMPs. Implementation of the SWPP and BMPs would help to reduce impacts from dust-generating activities. Therefore, impacts would be considered less than significant.

Construction equipment, on-road heavy-duty trucks, and construction worker vehicles would also generate criteria air pollution emissions. Emissions from construction worker commute trips would be minor compared to emissions from heavy-duty trucks. Criteria pollutant concentrations from these emission sources would incrementally add to regional conditions during the construction period. However, construction activities for the project would be temporary. Thresholds for significance criteria for pollutants of concern are estimated based on yearly accumulation estimates (tons/year). The emissions related to project activities during the short duration of the construction period averaged over the year will not likely exceed the thresholds, therefore, impacts would be considered less than significant.

**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)?**

## **SHORT-TERM CONSTRUCTION EMISSIONS**

**Less-than-Significant Impact.** The San Joaquin Valley is currently in non-attainment for Ozone and PM 2.5 for State and federal standards and in attainment for PM 10 for federal standards but not for the State. (Table 2) Construction emissions are described as "short term" or temporary in duration and have the potential to represent a significant impact with respect to air quality, especially fugitive dust emissions (PM<sub>10</sub>). Fugitive dust emissions are primarily associated with site preparation and vary as a function of such parameters as soil silt content, soil moisture, wind speed, acreage of disturbance area, and miles traveled by construction vehicles on-site and off-site. ROG and NO<sub>x</sub> emissions are primarily associated with gas and diesel equipment exhaust and the application of architectural coatings for which the SJVAPCD is in attainment.

With respect to the project, levee repairs would result in the temporary generation of ROG, NO<sub>x</sub>, and PM<sub>10</sub> emissions from site preparation (e.g., excavation, grading, and clearing), material transport, and other miscellaneous activities. As discussed above, the contractor's employment of SWPPP and BMPs on site would reduce the generation of non-attainment constituents. The short term nature of the repairs would not result in a cumulatively considerable net increase for PM<sub>10</sub> or Ozone criteria pollutant for which the project region is in non-

attainment under an applicable federal or State ambient air quality standard. Therefore, the impact would be less than significant.

### **LONG-TERM OPERATIONAL (REGIONAL) EMISSIONS**

**Less-than-Significant Impact.** As discussed below under section XV, “Traffic and Circulation,” the long-term operation of the project would not cause a significant increase in vehicle traffic on the local roadway system. Thus, operation of the project would not increase long-term regional ROG, NO<sub>x</sub>, and PM<sub>10</sub> or local CO emissions associated with increases in mobile sources. In addition, implementation of the project would not increase VMT and, consequently, would not conflict with or obstruct implementation of SJVAPCD’s air planning efforts. Furthermore, construction of the project would not result in the operation of any major stationary emission sources. Thus, long-term operational emissions would not violate an air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. In addition, operational emissions would not result in a cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment under an applicable federal or State ambient air quality standard or conflict with or obstruct implementation of the applicable air quality plan. As a result, this impact is considered less than significant.

#### **d) Expose sensitive receptors to substantial pollutant concentrations?**

**Less-than-Significant Impact.** Construction of the project would result in short-term diesel exhaust emissions from on-site heavy-duty equipment. Construction of the project would generate diesel PM emissions from the use of off-road diesel equipment required for site grading and excavation, and other construction activities. The dose to which the receptors are exposed (a function of concentration and duration of exposure) is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the action. Thus, because of the dispersive properties of diesel PM (Zhu and Hinds 2002) and the temporary nature (less than 2 months) of the mobilized equipment use, short-term construction-generated TAC emissions would not expose sensitive receptors to substantial pollutant concentrations. As a result, this temporary impact is considered less than significant.

#### **e) Create objectionable odors affecting a substantial number of people?**

**Less-than-Significant Impact.** Construction of the project would result in diesel exhaust emissions from on-site construction equipment. The diesel exhaust emissions would be intermittent and temporary and would dissipate rapidly from the source with an increase in distance. In addition, no existing odor sources are located in the vicinity of the proposed project site and the project would not include the long-term operation of any new sources. Thus, the operation of the project would not create, further, or change existing objectionable odors that would affect a substantial number of people. As a result, this temporary impact is considered less than significant.

#### **f). Conflict with the state goal of reducing greenhouse gas emissions in California to 1990 levels by 2020, as set forth by the timetable established in AB 32, California Global Warming Solutions Act of 2006?**

**Less-than-Significant Impact.** Greenhouse Gases are gases that trap heat in the atmosphere are called greenhouse gases. The major concern is that increases in greenhouse gases are causing Global Climate Change, a change in the average weather on earth that can be measured by wind patterns, storms, precipitation and temperature. The principal greenhouse gases are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O),

sulfur hexfluoride (SF<sub>6</sub>), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and water vapor (H<sub>2</sub>O). To account for the warming potential of greenhouse gases, greenhouse gas emissions are often quantified and reported as CO<sub>2</sub> equivalents (CO<sub>2</sub>e). Emission sources are generally reported in metric tons/year of CO<sub>2</sub>. In 2006, California passed the California Global Warming Solutions Act of 2006 (Assembly Bill No. 32; California Health and Safety Code Division 25.5, Sections 38500. et seq., or AB 32), which requires the California Air Resources Board (CARB) to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide greenhouse gas emissions are reduced to 1990 levels by 2020 (representing an approximate 25 percent reduction in emissions).

The 2020 target reductions are currently estimated to be 174 million metric tons/year of CO<sub>2</sub> emissions. CARB staff has identified 44 recommended early actions that have the potential to reduce greenhouse gas emissions by at least 42 million metric tons/year of CO<sub>2</sub> emissions by 2020, representing 25 percent of the estimated reductions needed by 2020. The 44 measures are in the sectors of fuels, transportation, forestry, agriculture, education, energy efficiency, commercial, solid waste, cement, oil and gas, electricity, and fuel suppression.

In addition to identifying early actions to reduce greenhouse gases, the CARB has also developed mandatory greenhouse gas reporting regulations pursuant to requirements of AB 32. The regulations will require reporting for facilities that make up the bulk of the stationary source CO<sub>2</sub> emissions in California. The regulations identify major facilities as those that generate more than 25,000 metric tons/year of CO<sub>2</sub>. Cement plants, oil refineries, electric generating facilities/providers, co-generation facilities, and hydrogen plants and other stationary combustion sources that emit more than 25,000 metric tons/year of CO<sub>2</sub>, make up 94 percent of the point source CO<sub>2</sub> emissions in California (CARB, 2007).

At this time there are no statewide guidelines for greenhouse gas emission impacts, but this will be addressed through the provisions of Senate Bill 97 ("SB 97"), which was enacted in 2007. SB 97 "2007 Statutes. Ch. 185" acknowledges that local agencies must analyze the environmental impact of greenhouse gases under CEQA. Furthermore, the bill requires the State Office of Planning and Research "OPR" to develop CEQA guidelines for the effects and mitigation of greenhouse gas emissions. The guidelines are not yet available (OPR has until July 1, 2009 to draft the new greenhouse gas guidelines and the State Resources Agency will thereafter have until January 1, 2010 to certify and adopt the regulations). In the interim, local agencies must analyze the impact of greenhouse gases. There is currently no adopted threshold, so for this analysis, the project is considered to have a significant impact if it would be in conflict with the AB 32 State goals for reducing greenhouse gas emissions.

As with other individual projects the specific emissions from this project would not be expected to individually have an impact on Global Climate Change (AEP, 2007). Furthermore, greenhouse gas impacts are considered to be exclusively cumulative impacts; there are no non-cumulative greenhouse gas emission impacts from a climate change perspective (CAPCOA, 2008). The construction duration of the propose levee repairs are relatively short, 2 ½ month and no long-term generation of greenhouse gases would occur therefore the impact of the project on greenhouse gas generation is less-than-significant.

## BIOLOGICAL RESOURCES

THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>IV. Biological Resources. Would the project:</b>				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This section describes the existing conditions of biological resources within the project site, potentially significant effects from implementation of the proposed project, and mitigation, if necessary, to reduce potentially significant effects of the proposed project.

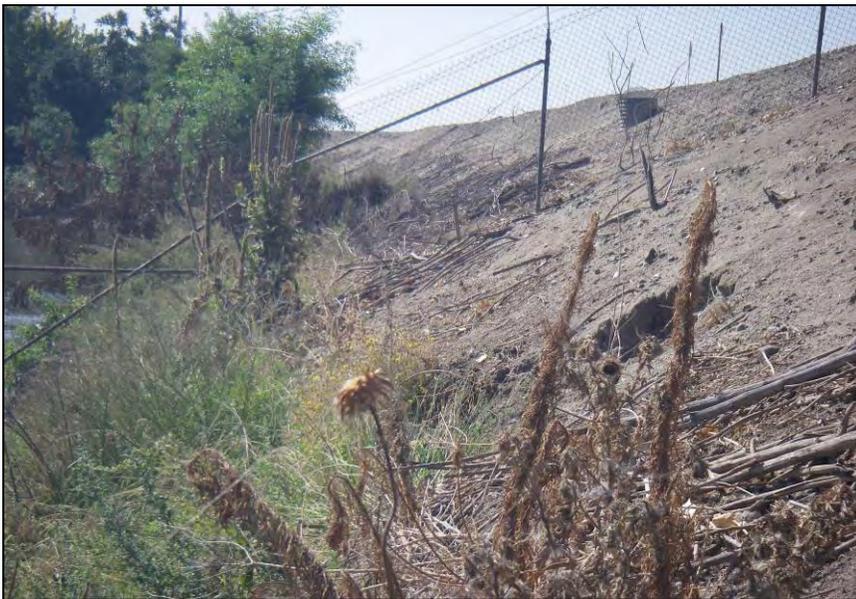
## ENVIRONMENTAL SETTING

Information on biological resources of the project site is based on a review of pertinent literature and databases, including the San Joaquin Flood Protection Project, Northern Sites Biological Assessment, April 2008 and San Joaquin Flood Protection Project, Northern Sites Biological Assessment, April 2008 and DWR San Joaquin Flood Protection Project 2008 Repair Sites, March 2009 and surveys conducted at the project site by DWR biologists

initially on January 6, 2009 and several subsequent surveys in January through March 2009. The surveys included a reconnaissance-level investigation of the project site and a protocol-level elderberry shrub (*Sambucus mexicana*) survey. The purposes of these surveys were to characterize biological resources present on the project site and to determine the potential for sensitive biological resources to occur on the project site.

Four of the project sites are situated in an urban-industrial area of the City of Stockton and a fifth site is located to the south near the confluence of the San Joaquin and Stanislaus River. All site repairs are on the waterside slide of federal levees of the Lower San Joaquin and Tributaries Flood Protection Project. All sites are in the secondary legal Sacramento-San Joaquin Delta. The Stockton area sites are subject to tidal fluctuation. At the Stockton area sites, the daily and tidal cycle amplitudes are greater than seasonal elevation. The magnitude of tidal amplitudes diminishes with distance from the Delta where seasonal water surface elevation differences are greater than tidal elevation changes. The topography in the vicinity of the project site is flat except for the bed of the San Joaquin River, which at all sites lies approximately 20 to 25 feet below the level of surrounding lands.

At all site, though clearing of underbrush will be necessary to access the water to place repair materials, every effort will be made to protect in-place all trees with a diameter at breast height (dbh) of 4" or greater. Tree trunks will be protected by selective trimming of branches, wrapping of trunks in burlap and careful placement of rock to avoid damage to the truck.



**Figure 8. RM 41.4L – View looking upstream.**

**RM 41.4L.** The most downstream site, RM 41.4L is an approximately 160 foot long erosion repair on the waterside of the levee adjacent to the Stockton wastewater treatment plant complex in RD 524. There is no public access to the area. The downstream end of the site abuts the concrete support of the railroad bridge of the Burlington Northern and Santa Fe Railroad (BNSF). On the landside of the repair site directly to the west is a remnant mixed riparian forest with both native and non-native trees including Cottonwood (*Populus fremontii*), Tree of Heaven (*Alianthis Altissima*) and black locust (*Robinia pseudoacacia*) was recently substantially cut back. Within the southern edge of this area are two elderberry shrubs intermixed with Himalayan blackberry (*Rubus discolor*). The Blue Elderberry or Mexican Elderberry (*Sambucus Mexicana*) is the only host to the endangered native Elderberry Longhorned Beetle. One of the elderberry shrubs was located greater than 100 feet from the repair area including staging area; the second shrub is located 90 feet from the landside edge of the levee crown behind treatment plant piping and adjacent to a canal between the levee of the San Joaquin River and the levee of the treatment pond.



**Figure 9. Elderberry Shrub on landside of RM 41.4L**

A canal runs along the outside of the treatment ponds beyond the most upstream edge of the site that does not appear to be connected to any water course outside of the treatment pond area. An approximately 10 foot wide thin strip of riparian vegetation grows in a narrow strip along the waterside base of the levee. Plant species include five Oregon ash (*Fraxinus latifolia*), mugwort (*Artemisia douglasiana*), and Mexican and Common Bog Rush (*Juncus mexicanus* and *effuses*) and Common Tule (*Scirpus actushoenoplectus acutus*).

Vegetation is absent or eliminated on much of the mid and upper levee slope through annual maintenance activities. Common ruderal species observed on the levee slopes are non-

native species such as milk thistle (*Silybum marianum*), sweet clover (*Melilotus alba*), knotgrass (*Paspalum* sp.), *Bromus* species, and *Avena* species. Dense willow thickets (*Salix* spp.) and large patches of tules and reeds (*Scirpus* spp.) are found off-site both across the river and downstream. Figures 8 and 9.

**RM 42.1R.** No vegetation is present at the proposed 80 foot repair length at RM 42.1 situated on the levee slope directly below the State Highway 4 Garwood Bridge. The existing condition is a slope of eroding grouted concrete and placed large rock at the toe beneath and in the shadow of the bridge.

**RM 42.5R and 42.8R.** These two sites are both located on the waterside of the levee adjacent on the landside to highly groomed greens of the Stockton Municipal Golf Course edged by a row of non-native conifers and other exotic park-like species of tree. The two sites are separated by with treeless stretches still faced with competent rock. RM 42.5R is approximately 350 feet long. RM 42.8R has two segments noted as A and B that are 700 and 100 linear feet, respectively. RM 42.8B is located at an eroding cottonwood tree with undermined roots. Far fewer tree are found along RM 42.8A than the more downstream RM 42.5R.

The waterside riparian habitat at both RM 42.5R and 42.8R is characterized by large senescent trees and sparse understory vegetation along the lower levee slope and a thin strip of herbaceous and emergent species at the water edge within the tidal zone similar to RM 41.4 with a greater number of sedges growing in shallow water along the waters edge levee. Vegetation is absent or eliminated on much of the mid to upper levee slopes through annual maintenance activities. Species observed include mugwort (*Artemisia douglasiana*), heliotrope (*Heliotropium curassavicum*), and Mexican and Common Bog Rush (*Juncus mexicanus* and *effuses*). Native tree species in the overstory include Fremont's cottonwood (*Populus fremontii*), California black walnut (*Juglans californica*), willow (*Salix* spp.), valley oak (*Quercus lobata*), and box elder (*Acer negundo* var. *californicum*). Non-native trees include Cork Oak (*Quercus suber*) and Black Locust (*Robinia pseudoacacia*). The mid and upper portion of the levee slope with ruderal vegetation in the project area is manipulated by the Reclamation Districts to prevent growth of vegetation with similar grass species observed at RM 41.4L. At the most upstream end of the RM 42.8 site, the vegetation changes and Common Horsetail (*Equisetum arvense*.) and Common Tule (*Scirpus actushoenoplectus acutus*) are found on the toe and emergent areas of the levee.



**Figure 10, View of Golf Course from Levee Crown**

At all the Stockton area sites, the waterside levee slopes in the project area provide little habitat for common mammals, reptiles, and amphibians. Wildlife species would primarily utilize the levees as temporary dispersal, foraging, or resting habitat. The sparse habitat does not provide cover, but small mammals such as raccoon, striped skunk, and Virginia opossum could occur. At the sites adjacent to the golf course, there is evidence of ground squirrel or gopher hole/mounds seen on landside slope and levee crown. The urban nature of the sites and presence of recreational users and domestic pets would discourage wildlife use. However, the wastewater treatment ponds are used by migratory and wading birds and the golf course exhibits a large population of both wild and feral domestic geese adjacent to the golf course. Swainson's hawk (*Buteo swainsoni*) has been documents across the river in RD 17 and use by other raptor species has been observed within the trees at the RM 42 sites. On one of the site visits, a coyote family (*Canis latrans*) was observed next to the wastewater ponds where vegetated spoil piles provide cover.



**Figure 11. RM 42.8R (B) Looking Downstream**

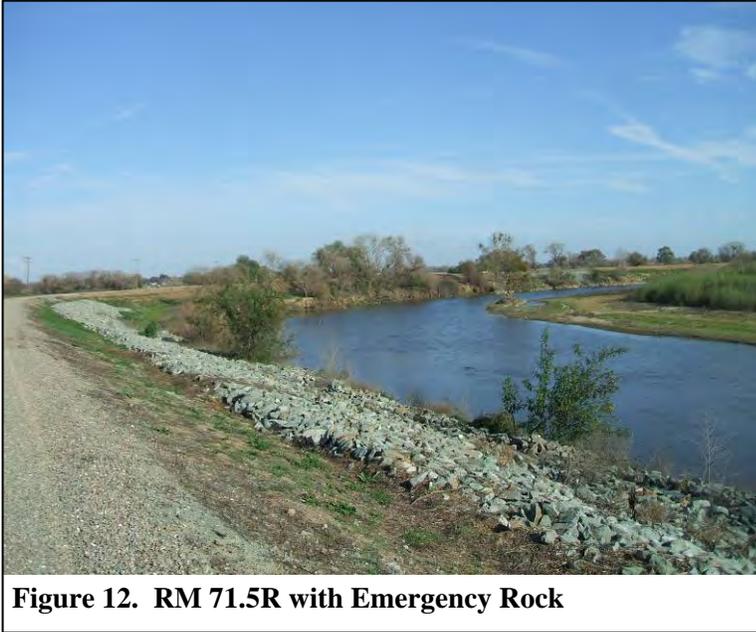
The San Joaquin River provides habitat for numerous native and non-native fish species including striped bass (*Morone saxatilis*), black bass (*Micropterus spp.*), catfish (*Ictaluridae*), Central Valley steelhead (*Oncorhynchus mykiss*), and delta smelt (*Hypomesus transpacificus*). DWR observed a large number of carp (*Cyprinus carpio*) on site in fishing creels

The Durham Ferry Site, RM 71.5R is 22 miles upstream of the Stockton sites and is the longest repair site at 2,200 linear feet. The site is located along a vertical bank of eroding bend only very minimally subject to tidal influence. The San Joaquin River flows directly at the bank before it turns northward and the edge of the bank is actively breaking

off in large chunks. Across the river is a spit of lower unleveed floodplain that is submerged under higher river flows. Upstream beyond the site is a widening berm area with marshy area at the river edge. The landside habitat

of the repair site is mixed agricultural row crops and grazing areas with farmsteads with a few remnant Valley Oak (*Quercus lobata*).

The bank is varying distances from the waterside levee toe and has a narrow fringe of large riparian trees at the upstream half of the site in a narrow riparian area on the top of the bank with large native tree species in the overstory such as Fremont's cottonwood (*Populus fremontii*), California black walnut (*Juglans californica*), willow (*Salix* spp.), valley oak (*Quercus lobata*), and box elder (*Acer negundo* var. *californicum*). A stratified understory is beneath the riparian trees and on parts of the sloughing vertical bank with native species such as mugwort (*Artemisia douglasiana*), California rose (*Rosa californica*), heliotrope (*Heliotropium curassavicum*)



**Figure 12. RM 71.5R with Emergency Rock**

and California Blackberry (*Rubus ursinus*), and non-native species such as Himalayan Blackberry (*Rubus discolor*) black mustard (*Brassica nigra*) and Tree Tobacco (*Nicotiana glauca*). Ruderal vegetation occurs on the upper slope and top of bank, but this vegetation is removed annually from much of this portion of the levee. A large area of the downstream berm and a smaller area of the berm upstream along the site are covered with a rock blanket devoid of vegetation except occasional Tree Tobacco (*Nicotiana glauca*) that was placed under emergency flood fight conditions during a high-water event in winter 2006. Common ruderal species along the levee slope and berm include non-native herbs such as milk thistle (*Silybum marianum*), peppergrass (*Lepidium latifolium*), and sweet clover (*Melilotus alba*); and non-native grasses

such as knotgrass (*Paspalum* sp.), perennial rye grass (*Lolium perenne*), *Bromus* species, and *Avena* species.

The waterside levee slopes in the RM 71.5R project area provide limited habitat for common mammals, reptiles, amphibians, and bird species. The riparian band is too narrow and the vertical bank does not provide cover and preclude dens or shelter for larger mammal however the levee and face of the bank have high numbers of rodent holes primarily created and used by ground squirrel species. Raccoon, striped skunk, and Virginia opossum could occur in the area and they and other wildlife species would primarily utilize the levees as temporary dispersal, foraging, or resting habitat. Evidence of ground squirrel or gopher activity is seen on landside slope and crown. Both the San Joaquin National Wildlife Refuge and Caswell Memorial State Park on the Stanislaus River, approximately 2 miles to the south east from the repair site, have populations of the Riparian Brush Rabbit (*Sylvilagus bachmani riparius*). No suitable habitat is found for this species within the footprint of the repair site. The San Joaquin River provides habitat for numerous native and non-native fish species including striped bass (*Morone saxatilis*), black bass (*Micropterus* spp.), Central Valley steelhead (*Oncorhynchus mykiss*), and catfish (Ictaluridae).

## **SENSITIVE BIOLOGICAL RESOURCES**

Sensitive biological resources include plants, animals, and habitats that have been afforded special recognition by federal, State, or local resource agencies and organizations. Also included are habitats that are of relatively limited distribution or are of particular value to wildlife.

A list of state and federal special-status listed plant, invertebrate, fish, and wildlife species and habitat to potentially occur and affected by the Project was compiled from the USFWS online database. The online query was conducted on December 22, 2008. The California Natural Diversity Data Base (CNDDDB) was accessed for a list of federally listed species in San Joaquin County. Information on the presence or absence of listed species was obtained from field surveys conducted by biologists from DWR in 2008 and 2009.

The species lists from these queries and the rationale for inclusion or exclusion for consideration of impacts in this document are presented in **Table 4**. Both listed species and candidates for listing have been included here.

### **Special-Status Species**

Special-status species include those that are State-listed and/or federally listed as threatened or endangered; those considered as candidates for listing as threatened or endangered; those identified by the USFWS and/or DFG as species of concern and species of special concern, respectively; and animals identified by DFG as fully protected. Special-status plant species include those on CNPS Lists 1A (plants presumed extinct in California), 1B (plants rare, threatened, or endangered in California and elsewhere), or List 2 (plants rare, threatened, or endangered in California but more common elsewhere).

All raptors are protected under Section 3503.5 of the California Fish and Game Code, which prohibits take or destruction of raptors, including their nests and eggs. Raptors species that could nest and forage within the project site include Swainson's hawk, Cooper's hawk, American kestrel, red-tailed hawk, northern harrier, white-tailed kite, great horned owl, and burrowing owl.

### **Special-Status Plant Species**

Nine special-status plant species were identified in the CNDDDB and CNPS searches as occurring in the project vicinity. Five of these species occur in areas not present at the repair sites such as mesic areas (vernal pools) and/or in alkaline soils, freshwater marsh, and valley and foothill grassland habitats. The remaining four species have the potential to occur in one or more of the sites and are highlighted in the table below. Surveys will be undertaken during the blooming period and prior to construction. More detailed descriptions of these special-status plant species are provided below in **Table 3**

**Table 3. Special Status Plant Species**

Species	Status*	Habitat Effect	Determination	Life Form	Blooming Period
<i>Astragalus tener</i> var. <i>tener alkali milk-vetch</i>	List 1B.2	playas, valley & foothill grassland (adobe clay), vernal pools (alkaline)	alkaline soils, and clay soils in grassland and vernal ponds areas, are not present on the site	annual herb	March - June
<i>California macrophylla round-leaved filaree</i>	List 1B.1	cismontane woodland, valley and foothill grassland (clay)	these habitats will not be impacted by the project	annual herb	March - May
<i>Cirsium crassicaule slough thistle</i>	List 1B.1 State S2.2	chenopod scrub, marshes and swamps, sloughs, riparian scrub	habitat for the species occurs along the edge of the water	annual or perennial herb	May - August
<i>Cordylanthus palmatus palmate-bracted bird's-beak</i>	List 1B.1	chenopod scrub, valley & foothill grassland (alkaline)	grows in alkaline soils that are not present on the site	annual herb, hemiparasitic	May - October
<i>Eryngium racemosum Delta button-celery</i>	List 1B.1	Riparian scrub, vernal mesic clay depressions	alkaline soils and vernal ponds areas are not present on the site	annual or perennial herb	June - September
<i>Hibiscus lasiocarpus rose-mallow</i>	List 2.2	marshes and swamps, freshwater	habitat for the species occurs along the edge of the water	rhizomatous herb, emergent	June - September
<i>Lathyrus jepsonii</i> var. <i>jepsonii Delta tule pea</i>	List 1B.2	marshes and swamps, freshwater and brackish	habitat for the species occurs along the edge of the water	Perennial herb	May - June
<i>Sagittaria sanfordii Sanford's arrowhead</i>	List 1B.2	Marshes and swamps, freshwater sloughs, ponds and ditches	suitable freshwater marshes and swamps, freshwater sloughs, ponds and ditches will not be impacted by the project	perennial herb, emergent	May - October
<i>Symphotrichum lentum Suisun Marsh Aster</i>	1B.2	Marshes and swamps, freshwater and brackish	habitat for the species occurs along the edge of the water	Perennial herb	May - November

CNPS STATUS: 1A = Presumed extinct in California. 1B = Rare or Endangered in California and elsewhere.  
2 = Plant species considered rare, threatened, or endangered in California but more common elsewhere

### Special-Status Wildlife Species

Sixteen special-status wildlife species were obtained from USFWS (USFWS 2009) within the Vernalis and Stockton West Quads and listed in **Table 4**. In addition, eight special-status wildlife species were identified in the CNDDDB searches and noted in **Table 5**. Of the 24 species considered, 13 have potential to occur on or adjacent to the project site.

Suitable habitat for special-status vernal pool species such as vernal pool tadpole shrimp (*Lepidurus packardii*), vernal pool fairy shrimp (*Branchinecta lynchi*), and California tiger salamander (*Ambystoma californiense*) and succulent owl's clover (*Castilleja campestris* ssp. *Succulent*) is not found along the levees, outside the levee footprint, or near project staging areas.

The Project action area is outside of the known range for amphibians and reptiles such as the California tiger salamander and California red-legged frog. The central population of California tiger salamander occurs in seasonal ponds in grasslands and low foothill regions, and natural vernal pools. There are no seasonal ponds or vernal pools found on or adjacent to the project site, therefore these species are unlikely to occur on the project sites. The California red-legged frog (*Rana aurora draytonii*) inhabits dense, shrubby or emergent riparian

vegetation associated with perennial and ephemeral water bodies that are still or slow moving water. The riparian habitat at all sites is sparse and the San Joaquin River is neither still or slow moving and is affected by fluctuating tidal flows at the Stockton sites and by regular flow conditions at the Durham Ferry location, therefore, suitable habitat for red-legged frogs unlikely to be present at the three project sites.

All of the potential chinook species - Central Valley fall and late fall-run Chinook salmon (*Oncorhynchus tshawytscha*), winter-run Chinook salmon (*Oncorhynchus tshawytscha*) and Central Valley spring-run chinook salmon (*Oncorhynchus tshawytscha*) either have ranges outside the project areas or will be at lowest abundance during the construction period of mid-August through November.

The Project action area is outside of the known range for local threatened or endangered species such as the San Joaquin kit fox (*Vulpes macrotis mutica*); The San Joaquin kit fox is found in large expanses of grassland and scrubland communities and lacks any migration corridors from suitable habitats in the region. The large flowered fiddleneck (*Amsinokia grandiflora*) is unlikely to be on or near the Projects action areas as suitable habitat conditions are not present on any site. These species will not be discussed further.

**Table 4 Federally Listed Species and Effect Determination**

Common name Species	Status <sup>1</sup>	Habitat	San Joaquin River RM 41.4L		San Joaquin River RM 42.1R, 42.5R, 42.8R		San Joaquin River RM 71.5R	
			Determination <sup>2</sup>	Critical Habitat	Determination <sup>2</sup>	Critical Habitat	Determination <sup>2</sup>	Critical Habitat
<b>INVERTEBRATES</b>								
<i>vernal pool fairy shrimp</i> <i>Branchinecta lynchi</i>	T	Vernal pools; also sandstone rock outcrop pools	Unlikely - suitable habitat does not occur	No	Unlikely - suitable habitat does not occur	No	Unlikely - suitable habitat does not occur	No
<i>vernal pool tadpole shrimp</i> <i>Lepidurus packardi</i>	E	Vernal pools containing clear to highly turbid water in a wide range of sizes	Unlikely - suitable habitat does not occur	No	Unlikely - suitable habitat does not occur	No	Unlikely - suitable habitat does not occur	No
<i>valley elderberry longhorn beetle</i> <i>Desmocerus californicus dimorphus</i>	T	Riparian and oak savanna habitats with blue elderberry shrubs; elderberries are the host plant	High - host plants identified within 100 ft of project area	No	Low - host plants not identified within 100 ft of project area	No	Low - host plants not identified within 100 ft of project area	No
<b>FISH</b>								
<i>green sturgeon</i> <i>Acipenser medirostris</i>	T	Large, mainstem rivers with cool water and cobble, clean sand, or bedrock for spawning	Low - within known range of juvenile rearing in the southern Delta	No	Low - within known range of juvenile rearing in the southern Delta	No	Low - outside of known range; potential effects to supporting habitat not anticipated	No
<i>Delta smelt</i> <i>Hypomesus transpacificus</i>	T	Estuarine or brackish water up to 18 ppt; spawn in shallow brackish water upstream of the mixing zone where salinity is around 2 ppt	Low - within known range but instream construction will occur when outside known fish range and before potential spawning migration	Yes	Low - within known range but instream construction will occur when outside known fish range and before potential spawning migration	Yes	Unlikely - outside of known range ; potential effects to supporting habitat not anticipated	No
<i>Central Valley steelhead</i> <i>Oncorhynchus mykiss</i>	T	Rivers and streams with cold water, clean gravel of appropriate size for spawning, and suitable rearing habitat; rear in freshwater $\geq 1$ years	Medium - instream work will occur when fish are at lowest abundance (September 15 - October 31).	Yes	Medium - instream work will occur when fish are at lowest abundance (September 15 - October 31).	Yes	Medium - instream work will occur when fish are at lowest abundance (September 15 - October 31).	Yes
<i>Central Valley fall and late fall-run Chinook salmon</i> <i>Oncorhynchus tshawytscha</i>	SC	Low elevation mainstem rivers with cool water, deep pools and suitable spawning gravel; migrate to the ocean to feed and grow until sexually mature	Medium - instream work will occur when fish are at lowest abundance (September 15 - October 31).	No	Medium - instream work will occur when fish are at lowest abundance (September 15 - October 31).	No	Medium - instream work will occur when fish are at lowest abundance (September 15 - October 31).	No

<b>winter-run Chinook salmon</b> <i>Oncorhynchus tshawytscha</i>	E	Mainstem rivers reaches with cool water and available spawning; rear 5 to 10 month in the river and estuary; migrate to the ocean to feed and grow until sexually mature	<b>Unlikely - outside of known range ; potential downstream effects to supporting habitat not anticipated</b>	No	<b>Unlikely - outside of known range ; potential downstream effects to supporting habitat not anticipated</b>	No	<b>Unlikely - outside of known range ; potential downstream effects to supporting habitat not anticipated</b>	No
<b>Central Valley spring-run chinook salmon</b> <i>Oncorhynchus tshawytscha</i>	T	Low- to mid-elevation rivers and streams with cold water, clean gravel of appropriate size for spawning, and suitable rearing habitat; typically rear in freshwater for one or more years before migrating to the ocean	<b>Unlikely - outside of known range ; potential downstream effects to supporting habitat not anticipated</b>	No	<b>Unlikely - outside of known range ; potential downstream effects to supporting habitat not anticipated</b>	No	<b>Unlikely - outside of known range ; potential downstream effects to supporting habitat not anticipated</b>	No
<b>AMPHIBIANS</b>								
<b>California tiger salamander, central population</b> <i>Ambystoma californiense</i>	T	Natural vernal pools or seasonal ponds in grasslands and low foothill regions	<b>Unlikely - suitable habitat does not occur</b>	No	<b>Unlikely - suitable habitat does not occur</b>	No	<b>Unlikely - suitable habitat does not occur</b>	No
<b>California red-legged frog</b> <i>Rana aurora draytonii</i>	T	Permanent and semi permanent aquatic habitats such as creeks and cold-water ponds, with emergent and submergent vegetation;	<b>Unlikely - suitable habitat does not occur</b>	No	<b>Unlikely - suitable habitat does not occur</b>	No	<b>Unlikely - suitable habitat does not occur</b>	No
<b>REPTILES</b>								
<b>giant garter snake</b> <i>Thamnophis gigas</i>	T	Sloughs, canals, low-gradient streams and marsh habitats; irrigation ditches and rice fields; grassy banks and emergent vegetation for basking; high ground protected from flooding during winter	<b>Low - water treatment plant ditch near site, emergent vegetation present, but upland habitat is bare</b>	Yes	<b>Unlikely - suitable habitat does not occur</b>	No	<b>Low - suitable habitat may occur in slow water zone with emergent vegetation</b>	Yes
<b>MAMMALS</b>								
<b>riparian (San Joaquin Valley) woodrat</b> <i>Neotoma fuscipes riparia</i>	E	Riparian forest	<b>Low - suitable habitat is sparse</b>	No	<b>Unlikely - suitable habitat does not occur</b>	No	<b>Low - suitable habitat is sparse</b>	No
<b>riparian brush rabbit</b> <i>Sylvilagus bachmani riparius</i>	E	Riparian forest	<b>Unlikely - suitable habitat does not occur</b>	No	<b>Unlikely - suitable habitat does not occur</b>	No	<b>Low - suitable habitat is sparse</b>	No
<b>San Joaquin kit fox</b> <i>Vulpes macrotis mutica</i>	E	Chaparral, grasslands, and scrubland communities	<b>Unlikely - suitable habitat does not occur</b>	No	<b>Unlikely - suitable habitat does not occur</b>	No	<b>Low - suitable habitat may be in the vicinity</b>	No

PLANTS								
<i>large-flowered fiddleneck</i> <i>Amsinckia grandiflora</i>	E	Cismontane woodland, valley and foothill grasslands; elevation 900-1,000 ft ; blooming period April-May	<i>Unlikely - suitable habitat is not present; Known from only three natural occurrences</i>	No	<i>Unlikely - suitable habitat is not present; Known from only three natural occurrences</i>	No	<i>Unlikely - suitable habitat is not present; Known from only three natural occurrences</i>	No
<i>succulent owl's-clover</i> <i>Castilleja campestris ssp. succulenta</i>	T	Vernal pools; elevation 80-2,300 ft; blooming period April-May	<i>Unlikely – vernal pools are not present on the project site</i>	No	<i>Unlikely - vernal pools are not present on the project site</i>	No	<i>Unlikely - vernal pools are not present on the project site</i>	No

STATUS<sup>1</sup> E = listed as Endangered under the federal Endangered Species Act; T = listed as Threatened under the federal Endangered Species Act  
SC = federal Species of Concern

Common Name and Scientific Name	State Status	Global Status	Habitat	RM 41.4L	RM 42.1R, 42.5R, 42.8R	RM 71.5R
				Potential to Occur on the Project Site		
tricolored blackbird <i>Agelaius tricolor</i>	S2	G2G3	Nest by open water in large cattail, tule or Himalayan blackberry patches.	Low, suitable habitat not present	Low, suitable habitat not present	Low, suitable habitat not present
Sacramento anthicid beetle <i>Anthicus sacramento</i>	S1	G1	Occurs on sand bars in the delta	Low, suitable habitat not present	Low, suitable habitat not present	High suitable habitat present
burrowing owl <i>Athene cunicularia</i>	S2	G4	Nests underground in existing burrows in open, dry annual or perennial grasslands, deserts, and scrublands with low growing vegetation.	High, suitable habitat present	High suitable habitat present	High suitable habitat present
Swainson's hawk <i>Buteo swainsoni</i>			Breeds in grasslands with scattered trees, riparian area, savannahs and agricultural areas. Forages in grasslands, suitable grain or alfalfa fields, or livestock pastures adjacent to nesting habitat. Nests on large trees in open areas.	High suitable habitat present	High suitable habitat present	High suitable habitat present
western yellow-billed cuckoo <i>coccyzus americanus occidentalis</i> )	S1	G5T3Q	Nest in riparian forest in broad flood plains, often in willow and cottonwood trees often with understory of blackberry, nettles or grape. Near riparian forest along larger river systems.	Low, suitable habitat not present	Low, suitable habitat not present	Low, suitable habitat not present
California horned lark <i>Eremophila alpestris actia</i>	S3	G5T3Q	Nest in short grass prairie, meadows, coastal plains, fallow grain fields and alkali flats. Occurs in parts of San Joaquin valley & east to foothills.	Low, suitable habitat not present	Low, suitable habitat not present	Low, suitable habitat not present

Merlin <i>Falco columbarius</i>	S3	G5	Uses clumps of trees or windbreaks for roosting. Near tidal estuaries, farms and ranches, open woodland, savannahs, edges of grassland	Low, few trees grow on the site	Low, few trees grow on the site	Low, few trees grow on the site
white tailed kite <i>Elanus leucurus</i>	S3	G5	Nests in isolated dense topped trees. Near river bottomlands or marshes next to deciduous woodland, rolling foothills and valley margins with scattered oaks	Low, few trees grow on the site	Low, few trees grow on the site	Low, few trees grow on the site

## Special Status Species Discussion

### Valley Elderberry Longhorn Beetle

The Valley Elderberry Longhorn Beetle (VELB) is listed as a threatened species under the ESA (45 FR 52803) but not listed under CESA. The VELB is found in scattered populations throughout its historical distribution throughout the Central Valley from Redding (Shasta County) to Bakersfield (Kern County) (Arnold et al. 1994). The VELB is found only in association with its host plant, the blue elderberry (*Sambucus* spp.), an obligate host for beetle larvae that is found in or near riparian and oak woodland habitats.

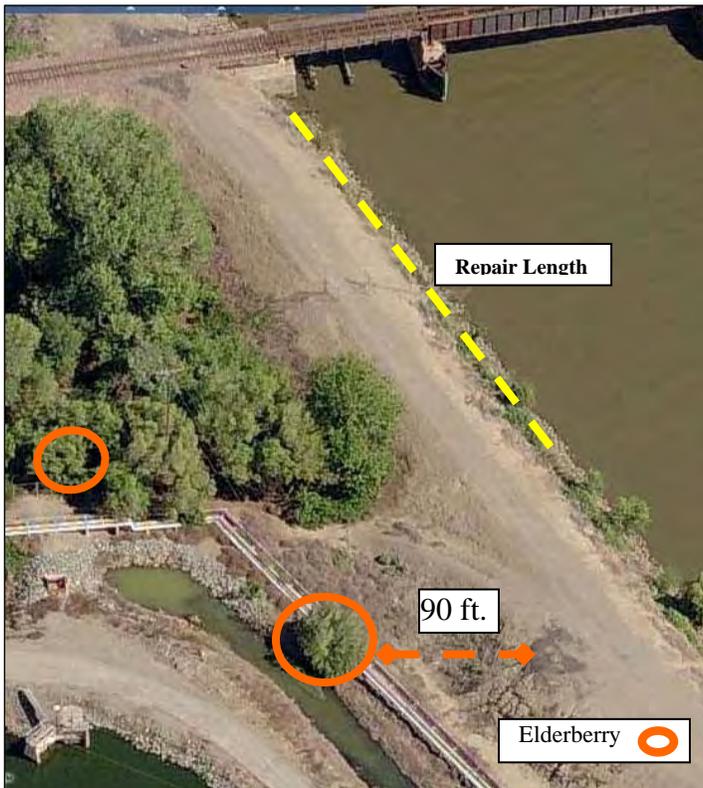


Figure 13. Elderberry Shrubs near RM 41.4L

Blue elderberry shrubs were only observed adjacent to the RM 41.4L site near the Stockton wastewater treatment plant. One large plant is located approximately 90 feet west on the landside of the site and close to another plant complex is located approximately 200 feet directly west of the repair site also on the landside. These shrubs will be fenced off and avoided.

Eleven elderberry shrubs are located along the side of the construction haul route on the levee road accessing the site. However, construction will occur outside the active period of the beetle (February 15- June 15). See Figure 13 for location of elderberry shrubs near the site and the shrubs will have protective fencing.

### Green Sturgeon

The southern Distinct Population Segment (DPS) of North American green sturgeon was federally listed as threatened on April 7, 2006 (71 FR 17757). The final rule is effective June 6, 2006. The southern DPS includes coastal and Central Valley populations south of the Eel River. The Sacramento River supports the southernmost known spawning population of green sturgeon (Moyle 2002). The San Joaquin River may have supported a spawning population in the past based on recent (2003) white sturgeon spawning and past presence in the system

(71 FR 17757). In recent years, juvenile green sturgeon have been collected within San Joaquin County at Mossdale Landing, between the Stockton and Durham Ferry sites, during DFG's chinook salmon smolt trapping study (1987-present), but specific numbers have either not been recorded or are considered unreliable by DFG. There is limited information on the distribution and presence of adult green sturgeon in the San Joaquin River basin. However, green sturgeon have been recently been observed in the Merced River, a large tributary to the San Joaquin River upstream of the Project sites. (M. Martinez, pers. comm.).

Juvenile and adolescent green sturgeon could be found year-round in the Delta, particularly in deep holes in river channels. Juveniles have been captured throughout the year at the CVP and SWP fish facilities to the west of the sites near Tracy. Presence on the shallower margins of the river is likely to occur at night, when fish are foraging in those areas. Juvenile fish could potentially occur at all repair sites

### **Delta Smelt**

Delta smelt (*Hypomesus transpacificus*) is listed as threatened (58 FR 12854, March 5, 1993). Critical habitat for Delta smelt is contained in Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties, California, with San Joaquin river extent east to Stockton and south to Vernalis. Delta smelt have the potential to occur in any area of the Delta where suitable habitat exists including the four Project sites in Stockton area but Delta smelt is unlikely to occur at the Durham Ferry site which is beyond Vernalis and any known records for smelt occurrence. The Stockton sites are closer to the tidal influences of the Delta, however, smelt spawning and incubation has not been observed in the Stockton area nor is it likely in any areas near the Stockton repair sites. Construction would occur within Delta smelt works windows for the area, outside of typical spawning season beginning December when Delta smelt would typically move upstream from more downstream in the Delta.

### **Central Valley Steelhead**

The Central Valley steelhead was federally listed as threatened on March 19, 1998 (63 FR 13347). NMFS has designated critical habitat for Central Valley steelhead (65 FR 7764, February 16, 2000)... Critical habitat for Central Valley steelhead was redesignated by NMFS on September 2, 2005 (70 FR 52488) following a legal challenge. Though historically, the steelhead trout was very abundant on the San Joaquin River, current steelhead population is drastically reduced from historic levels, and was considered extinct by some researchers (Reynold et al. 1990, as cited in McEwan 2001). However, there is evidence that small populations of steelhead persist in some lower San Joaquin River tributaries (e.g., Stanislaus River) (McEwan 2001). Adult Central Valley steelhead migrate upstream from the ocean during July through March in the Sacramento River. Juvenile migration to the ocean generally occurs from December through August. The peak months of juvenile migration are January to May (McEwan 2001). San Joaquin River migrations would occur in parallel with Sacramento River events. The Central Valley Steelhead would be potentially present at all repair sites during construction though not in high numbers.

### **Giant Garter Snake**

The giant garter snake (*Thamnophis gigas*) is listed as a threatened by the federal government species (58 FR 54053), and by the State of California. Critical habitat has not been designated for the giant garter snake. Giant garter snake is an aquatic snake that forages in the water for food, and utilizes watercourses to escape predators and disturbance. The species is endemic to wetlands and aquatic habitat in the Sacramento and San Joaquin Valleys. Suitable habitat includes marshes, sloughs, ponds, small lakes, low gradient streams, manmade waterways, and agricultural wetlands such as irrigation ditches and rice fields.

The snake requires four prominent features to be present in the habitat to provide escape cover and foraging habitat during the active season, or protection during hibernation or floods: (1) sufficient water during early-spring through mid-fall; (2) the presence of emergent, herbaceous, hydrophytic vegetation, such as cattails and bulrushes; (3) grass covered banks with openings in the vegetative cover for basking; and (4) upland vegetation

growing at a higher elevation than the watercourse. Giant garter snakes are generally absent from large rivers, ponds, and other watercourses that support introduced populations of large, predatory fish. The snakes do not occur in wetlands with sand, gravel, or rock substrates.

During the winter dormancy period (November to mid-March), giant garter snake inhabits small mammal burrows and other crevices in the substrate above elevation of potential floods. Giant garter snakes typically select burrows along south- and west-facing slopes with sunny exposures.

The giant garter snake is unlikely to be found at SJ RM 42.1R, 42.5 R, and 42.8 R. The steep levee slopes of along the San Joaquin River will not provide adequate basking sites and the banks are devoid of vegetation at large portions of the project sites. It is unlikely that giant garter snakes would migrate through the channels of the San Joaquin River as giant garter snakes do not migrate using wide flowing rivers such as the San Joaquin. The sparse thin line of emergent vegetation at the toe of the channel does not provide good conditions for cover and escape. In addition, the slopes of the levees are regularly cleared of vegetation limiting cover and quality of overall habitat

The potential for giant garter snake occurrence is low given the sparse and extremely limited potential habitat for giant garter snake at both SJ RM 41.4R near the wastewater plant and RM 71.5R near Durham Ferry. On the landside of the repair site at RM 41.4, a water conveyance ditch occurs just to the south and west situated between the San Joaquin River levee road and the secondary levee of the wastewater pond. However, this ditch appears to move water inclusive to the treatment plant and is controlled by gates and pipe valves with no link to outside agricultural irrigation systems that would provide a migration route into the pond area. The emergent vegetation on site is sparse and isolated, surrounded on all sides by bare slopes and compacted roads – not suitable or likely to provide cover, basking or escape habitat.

Suitable habitat is also lacking at RM 42.1R, RM 42.5R and RM 42.8R as emergent vegetation is lacking sufficient for cover and escape, migration routes other than the San Joaquin River are lacking and the sites are adjacent to urban neighborhoods and a highly maintained park-like golf course with constant human presence. The CNDDDB (2009) lists only one citation near the Stockton area for giant garter snake that is over 30 years old and was located at the Stockton diverting canal near Highways 88 and 99, approximately five miles away at the other side of the City of Stockton.

At RM 71.5R, Durham Ferry, the ordinary high water mark is 4 or 5 feet below the bank's vertical face making access to the bank from water unlikely. Garter snakes do not typically use flowing wide rivers as migration routes. Emergent vegetation is lacking at the site for cover and escape. The CNDDDB (2009) has no historic or current citations for giant garters snake near this location in its database. Because the lack of migration routes, suitable cover and lack of typical use of large rivers, it is not likely that giant garter snakes would occur at any of the repair sites.

### **Riparian Brush Rabbit and Riparian (San Joaquin Valley) Woodrat**

Both the riparian brush rabbit and the riparian woodrat were designated a federally endangered on February 23, 2000. Habitat for the riparian brush rabbit consists of riparian communities dominated by willow thickets, California wild rose, Pacific blackberry, wild grape, Douglas' coyote bush and various grasses. Today, the only known native populations are at Caswell Memorial State Park on the Stanislaus River and along Paradise Cut near Tracy. They have also been reintroduced to the San Joaquin National Wildlife Refuge.

Riparian woodrats are most numerous where shrub cover is dense and least abundant in open areas. In riparian areas, highest densities of woodrats and their houses are often encountered in willow thickets with an oak overstory. They are common where there are deciduous valley oaks, but few live oaks. Riparian woodrat populations today are greatly depleted, with the only known population at Caswell Memorial State Park with a possible second population near Vernalis, San Joaquin County.

The riparian woodrat and riparian brush rabbit are unlikely to occur at any of the Stockton area repair sites as suitable habitat does not occur in these urban areas. However, the Durham Ferry site at RM 71.5R is approximately 2 miles away from the San Joaquin National Wildlife Refuge and the confluence with the Stanislaus River, and 4 miles from Caswell Memorial State Park and Vernalis. However, suitable habitat that affords sufficient cover and easy access to water is not present at this repair site nor is there suitable habitat for riparian woodrat. A reconnaissance-level survey was conducted at the site in January 2009 to search for the typical tree nests of the riparian woodrat but none were found. It is unlikely that the riparian woodrat and riparian brush rabbit would occur at the Durham Ferry repair site.

**Sacramento Anthicid Beetle.** This beetle is found in the primary Delta on sandbars and is not likely to occur on any of the five repair sites due to lack of sandbar habitat and no known population near the repair locations.

### **Tricolored Blackbird**

Tricolored blackbird is a California species of special concern. They nest in dense colonies that range from less than 25 individuals to more than 80,000 and often change colony locations from year to year. Tricolored blackbirds may nest in a variety of habitats, including riparian vegetation. Tricolored blackbirds prefer emergent marsh vegetation or thickets of thorned plants such as blackberries. Tricolored blackbirds forage in grasslands, pastures, and agricultural fields, and could forage in the fields adjacent or across the river to the project sites.

### **Burrowing Owl.**

Burrowing owl is a California species of special concern. The CNDDDB does not document any burrowing owls within 5 miles of any of the project sites and were not observed during any DWR December 2008 and January 2009 reconnaissance surveys; however, potential habitat is present primarily at the Durham Ferry site and to a lesser extent at the Stockton sites due to the urban nature of activities that would discourage ground nesting birds. Burrowing owls typically nest and roost in burrows created by fossorial animals, such as ground squirrels, which are present but not abundant on the project site. Burrowing owls commonly forage in agricultural habitat. A reconnaissance-level survey was conducted at the site in January 2009 to search for the typical burrowing owl burrows but none were found.

**Swainson's Hawk.** Swainson's hawk is State-listed as threatened. This species nests in large trees such as oak and cottonwood and forages in grasslands, low shrublands, and fields of short agricultural crops, such as alfalfa and tomato. The Swainson's hawk breeding season is defined by DFG as March 1 through September 15. Swainson's hawks were observed nesting across the river about 4 miles south of the Stockton area sites during DWR nest surveys in 2008. The project area provides potential foraging habitat for this species with agricultural fields across Highway 4 in the Stockton area and adjacent to the Durham Ferry site. Trees bordering the agricultural fields and in the adjacent riparian habitat along the San Joaquin River provide suitable nest sites for this species.

**White Tailed Kite.** White-tailed kite is a fully protected species under California law. It nests in trees such as oak and cottonwood and forages in grasslands, low shrublands, and fields of short agricultural crops, such as alfalfa and tomato. This species inhabits the Central Valley throughout the year. There is a low possibility that White-tailed kites could use the project site at any of the sites due to lack of larger tree species, however, the limited number of trees at the sites and adjacent agricultural lands could provide suitable nesting and foraging habitat.

**Western Yellow-Billed Cuckoo,** In the western States, the yellow-billed cuckoo occurs primarily in arid regions where riparian woodlands, particularly those which include cottonwood trees as a dominant component, along larger river systems. However, riparian woodlands are defined as suitable for yellow-billed cuckoos if they are larger than 15 hectare (37 acres) and included a minimum of or 3 hectares (7.4 acres) a of closed-canopy, broad leafed forest (Laymon, 1987. All repair sites are on narrow bands of remnant riparian and emergent vegetation that would not support western yellow-billed cuckoo.

**California Horned Lark.** The horned lark is a common to abundant resident in a variety of open habitats, usually where trees and large shrubs are absent. Grasses, shrubs, forbs, rocks, litter, clods of soil, and other surface irregularities provide cover where it builds grass-lined nest; cup-shaped in depression on ground in the open. The repair area footprints are located in areas that are managed by the Reclamation Districts and are narrow edges of waterside levee habitat and do not provide suitable habitat for cover or breeding for the horned lark.

**Merlin.** The Merlin is the only species on the DFG Special Concern List which is not known to breed in California. The Merlin occurs as a transient throughout most of California, but wintering birds are concentrated along the coast and in the Central Valley. The Merlin uses open areas and edge habitats for foraging. The Merlin is not likely to present at repair sites during active construction period as they arrive later in winter.

### **Sensitive Habitats**

Sensitive habitats include those identified as sensitive natural communities “rare and worthy of consideration” in the List of California Terrestrial Natural Communities Recognized by the CNDDDB, as well as those protected under Section 404 of the Clean Water Act (CWA), Section 1602 of the California Fish and Game Code, and the State’s Porter-Cologne Water Quality Control Act. Patches of Great Valley oak riparian forest immediately outside the boundaries of the Durham Ferry RM71.5R project site could be considered sensitive habitats.

## **DISCUSSION**

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

### ***Special-Status Plants***

**Less than Significant with Mitigation.** The project sites could support suitable habitat for special-status plants. Surveys will be undertaken during blooming seasons. If present, DFG will be consulted and plants will either be avoided or transplanted to a suitable location. Therefore any potential impact would be less than significant with these measures.

### ***Valley Elderberry Longhorn Beetle***

**Less than Significant with Mitigation.** Two elderberry shrubs (or clusters of shrubs) were documented along the land side of the existing levee at RM 41.4L. Only one is within 100 feet of the repair activity. An additional 11 elderberries are located along the haul route to the site. All elderberry shrubs will be protected in place with fencing and construction would occur outside of active flight of the beetle (February 15 – June 15). Potential damage and mortality to these shrubs from construction activities associated with the proposed project is considered to be a potentially significant impact on valley elderberry longhorn beetle.

According to the USFWS guidelines, USFWS Conservation Guidelines for Valley Elderberry Longhorn Beetle (USFWS 1999), a 100-foot buffer around elderberry shrubs should be established by the project applicant wherever feasible to completely avoid potential impacts to valley elderberry longhorn beetle. Where a 100-foot buffer is not feasible, a minimum buffer of 20 feet from the dripline shall be maintained around each elderberry shrub. Implementation of Mitigation Measure Bio-1 would reduce the potentially significant impact to valley elderberry longhorn beetle to a less-than-significant level.

### **Mitigation Measure Bio-1: Maintain a 20-Foot Buffer Around Elderberry Shrubs.**

The following measures would reduce potentially significant adverse impacts to valley elderberry longhorn beetle to a less-than-significant level:

- ▶ If possible, DWR shall establish and maintain a minimum buffer of 20 feet around each elderberry shrub through the duration of project construction.
- ▶ Buffer areas shall be clearly marked in the field with brightly colored, temporary construction fencing and flagging. No project activity shall occur within the buffer areas.
- ▶ Following USFWS guidelines (USFWS 1999), construction crews shall be informed about the status of the beetle and the need to protect its elderberry host plant. If requested by USFWS, a qualified biologist shall monitor construction activities to ensure that the buffers remain protected throughout the construction period.
- ▶ If the establishment of a 20-foot buffer is not feasible, then USFWS shall be consulted. It is anticipated that shrubs that cannot be adequately protected will need to be transplanted to a protected onsite area before construction begins, in accordance with USFWS guidelines (USFWS 1999).

### ***Special-Status Fish***

#### **Less-than-Significant Impact with Mitigation.**

To avoid or minimize potential effects on special-status fish species, in-water activities would be scheduled for the period from August 15 to November 30. Work will take place near shore from landside equipment that will not enter the channel. Construction activities are expected to result in short-term increases in turbidity and suspended sediment that could disrupt feeding activities of fish and result in temporary disturbance or displacement from preferred habitats. DWR is committed to implementing avoidance measures and BMPs during construction. A SWPPP and associated BMPs are expected to reduce potential short-term impacts due to construction-related leakage or spills of toxic substances, turbidity, suspended sediment and sediment depositions to less than significant levels.

Disturbance of riparian vegetation and instream woody material (IWM) may result in short-term loss of overhead and in-stream cover. Long-term impacts may last months or years and generally involve physical alteration of the bank and riparian vegetation adjacent to the water's edge with consequent impact upon riparian cover. Long-term species habitats potentially affected by construction activities include spawning, rearing and migration habitat and predator habitat suitability. Altered bank characteristics could also cause changes to hydraulics, cover, and substrate conditions at the site or immediately downstream.

Short and long term effects will be analyzed using the Standard Assessment Methodology (SAM) model developed by the USACE for mitigation planning. The SAM model is used to approximate the net change in habitat value for each season of the year and life stage of special status fish species. The SAM model will determine the need for off-site mitigation if constructed features do not fully compensate for habitat impacts affecting special status fish species.

For the Stockton area sites, tidal variations are more pronounced than seasonal elevation changes and will be used as the basis for determining water surface elevation while seasonal elevations will be used at the more downstream Durham Ferry site. On-site project features such as planted riparian or emergent benches will be constructed at all sites except beneath the Highway 4 Bridge at RM 42.1R to provide hydraulic complexity of near shore zones, shade, cover, food sources. The limited area beneath the bridge is hydraulically constricted limiting the repair to returning the slope back to the original design.

Planting of emergent bulrushes and sedges at the other Stockton area sites will provide vegetative structure, cover and shade to benefit Delta smelt and steelhead smolt. No IWM will be added beyond existing material at Stockton area tidal sites as these in-stream structures may harbor predatory species to the detriment of Delta smelt. Riparian benches set at winter flow at the Durham Ferry site will provide floodplain attributes including shallow water, submerged vegetation, and in-stream and overhead cover for migrating steelhead. Rootwads set at the water edge in summer and winter will enhance the structural habitat and hydraulic complexity. These design features are also expected to provide long-term benefits to native fish species that use nearshore zones and floodplains for spawning and early rearing in the winter and spring.

Over the long-term, the project would have beneficial effects on fisheries and aquatic habitat because of the increase in shallow water habitat for juvenile salmonids due to the creation the various elevations of the vegetated benches that include IWM and construction of emergent benches to benefit Delta smelt. Construction-related effects could result in significant effects to fish, but with the implementation of revegetation, placement of IWM, construction timing, and the best management practices associated with protecting water quality, the project would have a long-term benefit to native fish populations, thus reducing any adverse effect of project to less than significant.

### **Nesting Raptors and Special-Status Birds**

**Less-than-Significant Impact with Mitigation.** Special-status birds that could nest within or adjacent to the levee repair sites and staging areas include Swainson's hawk, white-tailed kite, tricolored blackbird, and burrowing owl. In addition to these special-status species, a number of common raptors species could nest in the project vicinity. The nests of all raptor species are protected under Section 3503.5 of the California Fish and Game Code. Nest disturbance resulting from project construction has the potential to cause nest abandonment or the loss of eggs or chicks due to reduced parental care. The project does not propose to remove any known or potential nesting trees for special-status birds or common raptors. Loss of an active special-status bird nest or raptor nest caused by disturbance during project construction would be a significant project impact. This impact is considered to be potentially significant.

### **Mitigation Measure Bio-2: Conduct Pre-Construction Surveys for Special-status Birds and Nesting Raptors.**

The following measures would reduce potentially significant adverse impacts to Swainson's hawk and common raptors to a less-than-significant level:

- ▶ If project activity is scheduled to occur during the raptor nesting season (March 1 – September 15), a focused survey for raptors shall be conducted by a qualified biologist before commencement of activities to identify active nests on and in the vicinity of the project site. Surveys for Swainson's hawk nests shall include all areas of suitable nesting habitat within 0.25 mile of the project site. Surveys for other raptors shall include suitable nesting habitat within 500 feet of the areas where construction would occur. If no active nests are found, no further mitigation shall be required.
- ▶ If active nests are found during the surveys, appropriate buffers shall be established to minimize impacts. No project activity shall commence within the buffer area until a qualified biologist confirms that the nest is no longer active. The size of the buffers may be adjusted, depending on the project activity and stage of the nest, if a qualified biologist determines that activity within a reduced buffer would not be likely to adversely affect the adults or their young.

The following measures would reduce potentially significant adverse impacts to tricolored blackbird to a less-

than-significant level:

- ▶ If project activity is scheduled to occur during the breeding season for tricolored blackbirds (March 1 – September 15), a preconstruction survey shall be conducted by a qualified biologist in any areas of potentially suitable nesting habitat located within a 0.25 mile of the project site. If no nesting tricolored blackbirds are observed during the preconstruction surveys, then no further mitigation is required.
- ▶ If tricolored blackbirds are observed nesting on the project site, project-related construction impacts shall be avoided and minimized by establishment of a 0.25-mile buffer around the colony during the nesting period (March 1 – September 15) for all project-related construction activities. The size of the buffers may be adjusted if a qualified biologist determines that project activity within a reduced buffer would not be likely to adversely affect the adults or their young.

The following measures would reduce potentially significant adverse impacts to burrowing owls to a less-than significant level:

- ▶ prior to any ground-disturbing project-related construction activity, a focused survey for burrowing owls shall be conducted by a qualified biologist in accordance with DFG protocol (DFG 1995) to identify active burrows on and within 250 feet of each project site. The surveys shall be conducted no more than 30 days prior to the beginning of construction.
- ▶ If no occupied burrows are found in the survey area, the biologist shall document survey methods and findings in a letter report to DFG, and no further mitigation is required.
- ▶ If an occupied burrow is found, a buffer shall be established – 165 feet during the nonbreeding season (September 1 through January 31) or 250 feet during the breeding season (February 1 through August 31) – for all project-related construction activities. The size of the buffer area may be adjusted if a qualified biologist and DFG determine project-related construction activities would not be likely to have adverse effects. No project-related construction activity shall commence within the buffer area until a qualified biologist confirms that the burrow is no longer occupied, or consultations with DFG specifically allow certain construction activities to continue.
- ▶ If avoidance of occupied burrows is infeasible for project-related construction activities, on-site passive relocation techniques approved by DFG shall be used to encourage owls to move to alternative burrows outside of the project site. However, no occupied burrows shall be disturbed by project-related construction activities during the nesting season unless a qualified biologist verifies through noninvasive methods that the burrow is no longer occupied.

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

**Less than Significant Impact.** The NDDDB for the Vernalis Quad identified the Great Valley Cottonwood Riparian Forest community as occurring along the San Joaquin River upstream and downstream of Durham Ferry for 3-4 miles. It characterized the community as a very open cottonwood (*Populus fremontii*) forest with thickets of willow scrub containing several oxbows and riverine grasslands within. Such a community exists on the opposite bank and upstream and downstream of the site. However, the repair site at RM 71.5, Durham Ferry sits along the waterside of an outside bend of a meander that has river flows directed at it and has eroded substantially such that the historic Great Valley Cottonwood Riparian Forest community no longer exists at the site. However, any remnant trees in the site footprint of 4” or greater ddb will be retained and protected in place. The creation of

a riparian bench on site and the width of the remaining bench will allow the planting of trees typically found in the Great Valley Cottonwood Riparian Forest community without impact on levee integrity.

- 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?**

**Less-than-Significant Impact.** None of the project sites support federally protected wetlands, marsh, vernal pool, or coastal wetlands as defined by Section 404 of the CWA. However, the project sites qualify for protection as waters of the United States under Section 404 of the CWA as work will take place below the ordinary high water which defines water of the U.S. This makes the project subject to U.S. Army Corps of Engineers (USACE) jurisdiction under Section 404 of the CWA. A Pre-construction notification meeting has been held and a request for authorization to fill waters of the US has been made and is in progress and a nationwide permit is expected prior to commencement of construction.

- d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?**

**Less-than-Significant Impact.** A wildlife corridor is generally a topographical or landscape feature, or movement area, that connects two open space habitat parcels or river reaches that would otherwise be entirely fragmented or isolated from one another. Although a variety of wildlife species may use the project sites, they do not function as a known or major migratory corridor for terrestrial species. Project construction and operation would not substantially interfere with the movement of any native resident or migratory fish species as the river is sufficiently broad to provide avoidance during construction, no construction machinery will enter the stream and all construction will be conducted from landside. The project will not impede the use of any know native wildlife nursery sites. Therefore, there would be a less-than-significant effect on wildlife migration or nursery sites.

- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

**Less-than-Significant Impact.** State projects are not subject to local tree ordinances. All trees with dbh greater equal or greater than 4" will be protected in place where possible. No valley oaks are identified for elimination.

- 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?**

**No Impact.** The San Joaquin Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) is a master plan with the key purpose of balancing the need to conserve open space for wildlife and converting open space to accommodate a growing population while minimizing costs to project proponents and society at large. SJMSCP is administered by SJCOG, Inc., a nonprofit corporation established by San Joaquin County and the cities of Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton and Tracy. The SJMSCP describes measures that local agencies will perform to conserve biological resources, obtain permits for urban growth and public infrastructure projects, and continue to maintain the rich agricultural heritage and productivity of the county. Implementation of the project would not conflict with the provisions or otherwise affect implementation of the SJMSCP as the project's proposed actions is consistent with the goal of the conservation plan but is of a nature not covered by the plan.

## CULTURAL RESOURCES

THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>V. Cultural Resources. Would the project:</b>				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## ENVIRONMENTAL SETTING

The Stockton area repair sites are located in a territory region traditionally occupied by the Yachikamni. The Northern Valley Yokuts claimed the territory south of French Camp where the southern site at RM 71.5R is located. (Kroeber, 1925, Wallace 1978). Due to their rapid disappearance as a result of disease, missionization, and the influx of gold miners and settlers during the gold rush years, ethnographic and archaeological information is tenuous at best.

The San Joaquin Valley was first visited in historic times by Spanish Army Lieutenant Gabriel Moraga in 1805. Moraga discovered and named many of the features of the interior valley of California including the San Joaquin River (San Joaquin Valley History 2008a). Luis Arguello visited the area in 1817 and again in 1821. Trappers from the Hudson's Bay Company, Russian traders, and Spanish missionaries were the first non-Native peoples to venture into Yachikamni and Yokuts territory but probably had little impact on their culture. Several epidemics broke out in the Central Valley during the early decades of the 19th century that severely reduced population levels among many Native American groups and put great stress on their cultural systems. However, it was not until the Gold Rush period starting in 1848–1849 that intensive pressure from miners, farmers, ranchers, and other entrepreneurs and settlers significantly and permanently disrupted Native American life ways.

In 1836, the Spanish secularized the missions, and 1846, when the Americans took control of the State; the Mexican Government issued some 30 California land grants, specifically for agricultural purposes, primarily the raising of cattle. Much of the land in the vicinity of Stockton was part of the second largest Mexican land grant ever awarded. Known as Campo del los Franceses, it totaled 48,747 acres. The original owner, Guillermo Gulnac later sold the property to Captain Charles Weber. Captain, Charles M. Weber, a German immigrant went on to found the city of Stockton in 1849 which he named after American Commodore Robert F. Stockton.. The location of the city at the head of Stockton Slough, a wide and deep arm of the San Joaquin River, approximately 90 miles inland from the San Francisco Bay, allowed the city to serve as a major shipping point for many of the agricultural and manufactured products of Northern California. Rich peat soil and a temperate climate make the area one of the richest agricultural and dairy regions in California (Stockton History, 2008). The State Highway 4 Bridge, known as the Garwood Bridge under which the repair site RM 42.1 is located was constructed in 1933. It

was determined by the State Office of Historic Preservation not to be eligible for inclusion on the National Register of Historic Places.

The area around the San Joaquin River at Durham Ferry, the location of the repair at RM 71.5R is located in the Mexican land grant of Valentin Higuerra and Rafael Feliz known as the El Pescadero Ranch. This 35,000 acre grant extended from about Banta to some distance below Grayson. The El Pescadero Ranch became the site of settlement of San Joaquin City, established in 1849. A year later, the nearby Durham's Ferry first began shuttling pioneers, gold miners, farmers and their wagons across the San Joaquin River to follow post roads to the southern mines. The Durham Ferry site and San Joaquin City became a terminal for riverboats and grew in importance with the development of west side grain farming and cattle raising. Riverboats loaded up and carried grain north to Stockton. The city's popularity gave rise to talk that it would rival Stockton as the main conduit between San Francisco and the Mother Lode, and the city reached a population of 1,400 in its heyday. The town slowly subsided into obscurity in the early 1900s as trains edged out riverboats. It was replaced in importance by Vernalis with the coming of the railroad to the Valley's West Side.

All the levees proposed for repair were locally constructed levees adopted by the Corps of Engineers into the Lower San Joaquin River and Tributaries Projects as authorized by the Flood Control Act of 22 December 1944. The levees were substantially improved to meet federal levee standards primarily from the late 1950s through the mid-1960's and through additional individual contracts since then as needed.

A records search conducted through the Central California Information Center (CCIC) focused on the immediate project site (Appendix B) and within approximately ¼ mile from the project boundaries. Although no cultural resources have been documented directly within the project site, several prehistoric and historic-era resources have been documented in the immediate vicinity.

## **DISCUSSION**

### **a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?**

**Less than Significant Impact.** DWR archaeological staff performed a survey of the sites and a ¼ radius in early 2009. No cultural resources other than the existing levees that are scheduled for repair were identified during the course of such survey. The levees of the project areas have been in place for an undetermined number of years. Throughout their existence they have been continually maintained and modified. The current project will continue that tradition and the function of the structure will not change. Therefore the repairs will cause a less-than-significant impact to these cultural resources.

### **b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?**

**Less than Significant with Mitigation.** Despite the fact that previous archival and field research revealed only the existing levees as a cultural resource at the project sites, it is important to note that undiscovered subsurface remains may be present in the area and could be disturbed by the proposed project. In light of the potential to uncover unknown or undocumented subsurface cultural remains, this impact would be potentially significant. Implementation of Mitigation Measure Cul-1 would reduce this potential impact to a less-than-significant level.

### **Mitigation Measure Cul-1: Immediately Halt Construction Activities if Any Cultural Materials Are Discovered.**

If an inadvertent discovery of cultural materials (e.g., unusual amounts of shell, animal bone, flaked stone, bottle

glass, ceramics, structure/building remains, etc.) is encountered during project-related construction activities, ground disturbances in the area of the find will be halted immediately and a qualified professional archaeologist will be notified regarding the discovery. The archaeologist shall determine whether the resource is potentially significant as per the California Register of Historic Resources (CRHR) and develop appropriate mitigation. Implementation of this mitigation measure would reduce this impact to a less-than-significant level.

**c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?**

**No Impact.** No paleontological resources or unique geologic features are known to exist at any of the project sites.

**d) Disturb any human remains, including those interred outside of formal cemeteries?**

**Less than Significant with Mitigation.** Although no evidence of human remains was found in documentary research and a field reconnaissance investigation, future ground-disturbing activities in the project area could adversely affect presently unknown prehistoric burials. California law recognizes the need to protect interred human remains, particularly Native American burials and associated items of patrimony, from vandalism and inadvertent destruction. In light of the potential to uncover unknown or undocumented Native American burials, this impact is considered potentially significant. Implementation of Mitigation Measure Cul-2 would reduce this impact to a less-than-significant level.

**Mitigation Measure Cul-2: Immediately Halt Construction Activities if Any Human Remains Are Discovered.**

The procedures for the treatment of discovered human remains are contained in California Health and Safety Code Sections 7050.5 and 7052, and California Public Resources Code Section 5097.

In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, all such activities within 75 feet of the find shall be halted immediately and DWR or their designated representative shall be notified. DWR shall immediately notify the county coroner and a qualified professional archaeologist. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or State lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the Native American Heritage Commission (NAHC) by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). DWR's responsibilities for acting upon notification of a discovery of Native American human remains are identified in detail in the California Public Resources Code Section 5097.9. DWR or their appointed representative and the professional archaeologist will consult with a Most Likely Descendent (MLD) determined by the NAHC regarding the removal or preservation and avoidance of the remains and determine if additional burials could be present in the vicinity.

Assuming an agreement can be reached between the MLD and DWR or their representative with the assistance of the archaeologist, these steps will minimize or eliminate adverse impacts to the uncovered human remains. Therefore, Mitigation Measure Cul-2 would reduce the potential impact to a less-than-significant level.

## GEOLOGY AND SOILS

THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>VI. Geology and Soils.</b> 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 California Geological Survey Special Publication 42.)	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This section provides a description of the geologic conditions of the project site and mitigation if needed to reduce significant effects to geologic resources.

## ENVIRONMENTAL SETTING

The project site is Great Valley geomorphic provinces (California Geomorphic Provinces, California department of conservation, 2002) and in the San Joaquin Delta Watershed (6544.0). The Great Valley is a trough in which sediments have been depositing almost continuously since the Jurassic. The San Joaquin river system is meandering single sinuous channel that only in recent times has been confined by constructed levees. The levees were constructed on top of local soils primarily channel deposits varying in percents of

clays, silt and sand.

Neither San Joaquin County nor Stockton is considered to be a city or county affected by Alquist-Priolo Earthquake Fault Zones. No faults are documented in the vicinity of the project site. (Faults and Earthquakes in California, California Department of Conservation, 2003). There is little or no potential for liquefaction of soils to occur in the project sites due the absence of any known fault lines or seismicity in the area.

## DISCUSSION

- 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.**
  - ii **Strong seismic ground shaking?;**
  - iii **Seismic-related ground failure, including liquefaction?**
  - iv **Landslide?**

**No Impact.** San Joaquin County is not within an Alquist-Priolo Earthquake Fault Zone, no fault lines are known to be in the area of repairs. All levee repairs would be required to comply with standard engineering practices for levee design. The Central Valley Flood Protection Board’s standards are the primary state standards applicable to the proposed levee improvements; these are stated in Title 23, Division 1, Article 8, Sections 111–137 of the California Code of Regulations. The Board’s standards direct that levee design and construction be in accordance with USACE’s *Engineering Design and Construction of Levees*, the primary Federal standards applicable to levee improvements. Because the design, construction, and maintenance of levee improvements must comply with the regulatory standards of USACE and the Central Valley Flood Protection Board, the design and construction of all levee modifications under the proposed project would meet or exceed applicable design standards for static and dynamic stability, secondary impacts related to ground shaking, liquefaction, and seepage.

- b) **Result in substantial soil erosion or the loss of topsoil?**

**Less than Significant with mitigation.** Construction of the levee repairs would occur primarily before the rainy season, further reducing the risk of water erosion. Disturbing topsoil during levee construction could increase the potential for wind and water erosion in the project area; therefore, this impact is potentially significant. As discussed under **Mitigation Measure Hydro-1** in the “Hydrology and Water Quality” section (below), the construction contractor would be required to implement a stormwater pollution prevention plan (SWPPP) and best management practices (BMPs). The SWPPP will include an erosion control and restoration plan, a water quality monitoring plan, a hazardous materials management plan, and postconstruction BMPs. Implementation of **Mitigation Measure Hydro-1** would reduce this impact to a less-than-significant level. Result in substantial soil erosion or loss of topsoil

**Less Than Significant Impact.** The repair of the oversteepened bank will require the removal of approximately 900 cubic yards of soil to provide for a more stable slope. This soil may either be moved or compacted in on-site areas to create competent slope material in the more extensive erosion areas if of suitable composition or be removed from the site. Any exposed soil will be seeded with an appropriate seed mix to eliminate substantial

erosion. The contractor will use Best Management Practices and obtain a SWPPP to assure erosion is controlled.

- 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?**

**No Impact.** As discussed in a) above, liquefaction is unlikely due to lack of known faults. The levee or bank slope would increase at all sites to a much more stable declination decreasing potential for landslide. The proposed project designs would be required to comply with standard State and Federal engineering practices for levee design. As discussed in a) above, the design, construction, and maintenance of levee improvements must comply with the regulatory standards of USACE and the Central Valley Flood Protection Board. The levee repairs would ultimately increase the stability of the existing levee system, resulting in a flood control benefit. Therefore, the proposed project would have a less than significant effect on any expansive or unstable soils.

- 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?**

**No Impact.** The project soils exhibit a low shrink-swell potential. In addition, no structures for human occupancy would be constructed as part of the project. The levee repairs would increase the stability of the existing levee system, resulting in a flood control benefit. Because the soils in the project area have low shrink-swell potential, the proposed project would not result in the creation of substantial risks to property or life.

- 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?**

**No Impact.** No septic tanks or waste water disposal systems would be constructed as part of the proposed project. Therefore, there would be no impact on disposal of waste water.

# HAZARDS AND HAZARDOUS MATERIALS

THRESHOLDS OF SIGNIFICANCE Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>VII. Hazards and Hazardous Materials. Would the project:</b>			
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

This section provides a description of potential hazards and hazardous materials that may be created as a result of the proposed project and mitigation if needed to reduce any significant hazardous effects.

## ENVIRONMENTAL SETTING

All sites were researched for “Cortese Sites” using multi-agency maps and lists which are designated as being hazardous materials sites under Government Code Section 65962.5 No Cortese Sites were located within or

immediately adjacent to any of the five repair site boundaries. However, one of the sites, SJ RM 41.4L is located on the waterside of a levee protecting the facilities of the Stockton Wastewater Treatment Plant and wastewater lagoons including piping and storage areas and adjacent to the BNSF rail road track. The other Stockton area sites are near heavily traveled Highway 4 and the municipal golf course. The southernmost RM 71.5R site is located near areas of farm practice and an educational institute. While all active construction will be confined to the waterside and levee crown and staging areas, travel of construction vehicles will use access routes that go by utilities and potential agricultural and golf course maintenance infrastructure.

## DISCUSSION

### a) **Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

**Less than significant impact.** Construction of the proposed project would involve the routine transport and handling of hazardous substances such as diesel fuels, lubricants, asphalt, etc. Handling and transport of these materials could result in the exposure of workers to hazardous materials. The construction equipment used for this project will use diesel fuel and oil within the project footprint for operation of construction equipment. However, these materials will be used, stored and disposed of according to standard protocols for handling of hazardous materials. All personnel involved in use of hazardous materials will be trained in emergency response and spill containment. The construction contractor would be required to implement a stormwater pollution prevention plan (SWPPP) and best management practices (BMPs) that would minimize the potential for construction-related spills of hazardous wastes and would provide for appropriate and immediate cleanup of spills, if any were to occur.

For repairs at RM 41.4L adjacent to the Stockton Wastewater Treatment Plant, in all cases, the repair activities will use haul and delivery routes that do not interfere with the routine activities at the Sewage Treatment pond areas. The levee road will be the main access to the site going around the sewage ponds and not through any treatment facilities. No crossing of the BNSF railroad tracks will be necessary nor will the train freight traverse the repair sites. Neither private farm roads nor routes through the golf course areas will be used. The repair areas and staging areas will be fenced off to avoid any interaction between the repair activities and wastewater treatment, farm activities or maintenance of the golf course. The site is not a hazardous materials site. All known utilities will be identified on plans and contractors will protect and avoid such utilities by rerouting or fencing where needed. There are no known hazardous materials within any of the five project area footprints.

State agencies regulating hazardous materials are the California Environmental Protection Agency (Cal/EPA) and the Office of Emergency Services (OES). The California Highway Patrol (CHP) 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 CCR Title 22. The California Occupational Health and Safety Administration (Cal OSHA) has developed rules and regulations regarding worker safety around hazardous and toxic substances. Because DWR and its contractors would implement and comply with these regulations, impacts related to creation of significant hazards to the public through routine transport, use, and disposal of hazardous materials would not occur. Additionally, because DWR and its contractors would prepare and adhere to a SWPPP and BMPs during project construction, impacts from potential spills of hazardous materials would be minimized. Therefore, this impact would be less than significant.

### b). **Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?**

**Less than Significant with Mitigation.** During construction of the proposed project, hazardous materials such as

fuels and lubricants would be used to operate construction equipment such as scrapers, excavators, compactors, haul trucks, and loaders. Fuels and lubricants have the potential to be released into the environment at the project site causing environmental and/or human exposure to these hazards. This impact would be potentially significant. Implementation of Mitigation Measures Haz-1 (as well as preparation and implementation of a SWPPP and BMPs (see “Hydrology and Water Quality” section) would reduce this impact to a less-than-significant level.

**Mitigation Measure Haz-1: Ensure That All Employees Handling Hazardous Materials Are Trained In the Safe Handling and Storage of Hazardous Materials.**

Prior to the commencement of project construction, DWR or its contractor shall:

- ▶ ensure that any employee handling hazardous materials is trained in the safe handling and storage of hazardous materials and trained to follow all applicable regulations with regard to such hazardous materials; and
- ▶ identify a staging area where hazardous materials will be stored during construction in accordance with applicable State and federal regulations.

**c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

**Less-than-Significant Impact.** The Stockton area sites beneath and south of Highway 4 (RM 42.1R, 42.5R and 42.8R) are less than one mile away (0.7 miles) from the San Joaquin Elementary School located on Fresno Ave and the repair site at RM 71.5 R is within a half a mile of the Durham Ferry Outdoor Education Center that contains the Venture Academy Middle and High School located on S. Airport Way. No schools are located within a mile of the RM41.4L site. However, no activities or hazardous materials that would emit hazardous emission or require the handling of acutely hazardous material or waste would occur at the repair sites. The contractor will provide training to all worked in emergency response and spill containment during project construction. Therefore, implementation of the project, including construction activities, would not pose a hazard to children attending San Joaquin Elementary School or the Venture Academy Middle and High School. The impact would be less than significant.

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

**No Impact.** Soil-disturbing activities would be necessary to prepare the project site for construction of the proposed project. However, no hazards were identified at the project site. All sites were investigated for presence of a Cortese Site (sites compiled as being hazardous materials sites under Government Code Section 65962) using multi-agency maps and lists and no such site were found within or nearby any of the repair sites. Thus, the project would not create a significant hazard to the public or to the environment and, therefore, would have no impact on the public or the environment.

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

**No Impact.** No public airports are within two miles of any of the repair sites. No impact would occur.

- 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?**

**No Impact.** No private airports are within two miles of any of the repair sites with the closest being the New Jerusalem Airport, a small private field that is about 2.4 miles due west of the RM 71.5R site. No impact to safety would occur as a result of the project.

- g) **Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

**No Impact.** The proposed project would not impair implementation of or physically interfere with the adopted San Joaquin County Emergency Operations Plan or any emergency evacuation plans. Therefore, no impact would occur.

- 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?**

**Less-than-Significant Impact.** Four of the five sites are in urban areas not contingent to any wildland areas. The fifth site at RM 71.R is contingent to riparian areas both upstream and downstream and across the river. The grassy vegetation on all levees and 15 feet beyond the levee toe are maintained by local Reclamation Districts to provide visual inspection of the levee slope and to reduce grass fire potential. The construction contractor will be required to have a fire control and protection plan in place during construction. Construction of levee repairs is not anticipated to result in wildlands fires. Therefore, this impact would be less than significant.

# HYDROLOGY AND WATER QUALITY

THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>VIII. Hydrology and Water Quality.</b>				
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharges 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 that would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 on- or off-site erosion or siltation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 on- or off-site flooding?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Result in inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This section provides information on water quality and hydrology conditions in the project area and mitigation if needed to reduce potentially significant project effects to hydrology and water quality.

## ENVIRONMENTAL SETTING

### HYDROLOGY

The San Joaquin River 330 miles (530 km) long, is the second-longest river in California, United States. The San Joaquin River originates in the highest peaks of the Sierra Nevada Mountains above 11,000 ft, and flows down the western slopes of the Sierra Nevada and drains most of the area from the southern border of Yosemite, south to Kings Canyon National Park, making it the second largest river drainage in the state. The San Joaquin River's tributaries include the Stanislaus River, Tuolumne River, Merced River, Calaveras River and Mokelumne River. From its origin in the Sierra Nevada, the river flows west to the Central Valley and then at Mendota Pool flows north to the Sacramento-San Joaquin Delta meeting the Sacramento River near the city of Antioch. Together they form the Sacramento-San Joaquin Delta, one of the largest estuaries in the United States. Within the Delta, the San Joaquin River has two distributary rivers, the Old River and the Middle River, both of which once were the main channels of the river. Due to the bend in the San Joaquin River channel at the head of the Old River, a significant portion of the San Joaquin River flow continues down the Old River instead of heading northward along the San Joaquin

The San Joaquin and major tributaries drain about 32,000 square miles (83,000 km<sup>2</sup>) of California's San Joaquin Valley. Snowmelt runoff generates a majority of the flow volume from the watershed. The average unimpaired runoff of the main stem of the river at Millerton Reservoir is about 1.8 million acre feet per year (2.2 km<sup>3</sup>). Contemporary hydrology is dominated by irrigation storage, irrigation delivery, and flood control releases. Irrigation and flood control has virtually eliminated all traces of the natural flow regime, with the periodic exception of flood control releases. Water from the river is used to irrigate 1,500 square miles (3,900 km<sup>2</sup>) of highly productive farmland on the east side of the Central Valley where 200 kinds of produce are raised from oranges to cotton.

A San Joaquin River Agreement, implemented by the State Water Resources Control Board in 2000, resulted from a federal Record of Decision in 1999 and *EIS/EIR for Meeting Flow Objectives for the San Joaquin River Agreement, 1999-2010* provides for a redirection of up to 137,500 acre-feet of water annually from existing uses provide environmental benefits in the lower San Joaquin River and Delta with in-stream flows of 110,000 acre-feet for spring and 12,500 acre-feet for fall and 15,000 acre-feet available at any time during the year) as measured at Vernalis.

### WATER QUALITY

The Central Valley RWQCB sets water quality standards for beneficial uses of San Joaquin River water supply. Flow standards mentioned above benefit fish and wildlife beneficial uses. Water quality standards are also set for dissolved oxygen levels in the San Joaquin River near the City of Stockton and for salinity in the San Joaquin River in the Delta downstream of Stockton.

The San Joaquin River watershed drains a large area that encompasses a wide variety of land uses. During some years, portions of the San Joaquin River (and some of its tributaries) will run dry as water is diverted from the river for urban or agricultural use. Though the agricultural drain water or urban waste water will be returned to the original channel downstream of the point of diversion, the water returned to the river is not of the same quality as the water found in the upper watersheds. Through its Basin Plan reviews, specific amendments area added as scientific information on water quality, including drainage water issues, continues to be developed.

## DISCUSSION

**a) Violate any water quality standards or waste discharge requirements?**

**Less than Significant with Mitigation:** Exposed slopes during construction could be subject to rainfall and erosion and could cause temporary discharges of sediment and other contaminants in stormwater runoff to the San Joaquin River. Implementation of Mitigation Measure Hydro-1 would reduce this impact to a less-than-significant level.

**Mitigation Measure Hydro-1: Prepare a Storm Water Pollution Prevention Plan.**

Before the start of any construction work, site grading, or excavation associated with the levee repairs, the construction contractor shall prepare a Storm Water Pollution Prevention Plan (SWPPP) detailing measures to control soil erosion and waste discharges from the construction areas and submit a Notice of Intent (NOI) to the Central Valley RWQCB for stormwater discharges associated with general construction activity. The SWPPP will include an erosion control and restoration plan, a water quality monitoring plan, a hazardous materials management plan, and postconstruction BMPs. The BMPs will be maintained until all areas disturbed during construction have been adequately stabilized.

The specific BMPs that will be incorporated into the SWPPP will be determined during the final stages of project design. However, the SWPPP is likely to include one or more of the following standard practices, which are commonly used during the construction and postconstruction phases of levee repair projects:

- ▶ **Soil and Vegetation Disturbance.** Minimize ground and vegetation disturbance during project construction by establishing designated equipment staging areas, spoils and soil stockpile areas, and equipment exclusion zones prior to the commencement of any construction operations.
- ▶ **Hazardous Materials.** Use and store hazardous materials, such as vehicle fuels and lubricants, in designated staging areas located away from surface waters. Implement a spill prevention and control plan that specifies measures that will be used to prevent, control, and clean up hazardous materials spills.

All contractors conducting construction-related work shall be required to implement the SWPPP to control soil erosion and waste discharges of other construction-related contaminants. The general contractor and subcontractor(s) conducting the work shall be responsible for constructing or implementing, regularly inspecting, and maintaining the measures in good working order.

**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)?**

**No Impact.** The proposed project would not reduce or change the amount of groundwater passing through the system nor construct any new impervious surfaces that would interfere with groundwater recharge.

**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?**

**Less-than-Significant Impact,** Repair of eroding levee or bank slopes would not change existing drainage patterns nor alter the course of the river and would actually decrease the current level of erosion that threatens the levee integrity.

**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?**

**Less-than-Significant Impact.** The temporary removal of vegetation to place repair material could potential increase surface runoff. However, no increase in flooding would result from temporary change in surface permeability of the slope or bank.

**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?**

**Less-than-Significant Impact.** All repair work would take place on the waterside of the levee and where no Stormwater drainage system is in place. No impervious surfaces would be constructed as part of the levee repair and all landside staging areas will receive BMP for erosion control reducing any potential impact to water quality to less than significant.

**f) Otherwise substantially degrade water quality?**

**Less-than-Significant Impact.** During placement of in-water rock, some resuspension of channel bottom sediment may occur and introduce turbidity or sequestered pollutants to river flows. Such resuspensions will be of a short duration and comply with the Regional Water Quality Control Board water quality certification standard conditions for turbidity and suspension. During construction, agricultural soil will be placed in rock voids above mean tidal or mean summer water surface elevations. The rock layer will be surfaced with agricultural soil to support plant growth. Clean sand will be used as a planting medium within the rocks of in an emergent bench and in a layer on top at mean tidal elevation at the Stockton area sites. There is a potential for soil and sand to enter the stream. The emergent bench will be constructed during periods of low tide to minimize sand-caused turbidity. Clean sand was chosen as a medium because it does not remain in suspension very long, settling quickly back on the bench. Agricultural soil will be added in lifts to fill rock voids with lower levels added during lower tides to minimize washing away. The added layer of soil will be covered with jutting and seeded and planted to allow root systems to develop and retain soil.

With these construction measures and required construction water quality monitoring, and as discussed in **Mitigation Measure Hydro-1** above, a SWPPP and associated BMPs would be implemented to protect water quality in the project area. Therefore the project is not expected to substantially degrade water quality and any impact will be reduced to less than significant.

**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?**

**No Impact.** The project would not include construction of any housing. Therefore, there would be no impact.

**h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?**

**No Impact.** The project would not include placement of any structure that would impede or redirect flood flows. Therefore, there would be no impact.

**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?**

**No Impact.** The proposed project would reduce exposure of people or structures to flooding. This impact would be beneficial.

**j) Inundation by seiche, tsunami, or mudflow?**

**No Impact.** The project area is geographically removed from areas where the potential for seiche, tsunami, or mudflow exists (e.g., near a lake, the ocean, or hillsides). Therefore, there would be no impact associated with seiche, tsunami, or mudflow.

**MINERAL RESOURCES**

THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>X. Mineral Resources. Would the project:</b>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**ENVIRONMENTAL SETTING**

Of the five sites proposed for levee repairs, only one site would require removal of soil which could be considered a mineral resource. The river bank at RM 71.5R is nearly vertical. In order to reestablish a stable slope for the bank, the near vertical 1:1 slope would be resloped to an approximately 2: 1 slope partially by removal of the upper edge of the top of the bank. The other option of extending the slope into the channel from the existing top edge of the bank could create too great an intrusion into the stream with the potential to redirect the stream. The California Surface Mining and Reclamation Act (SMARA), was enacted by the State Legislature to regulate activities related to mineral resource extraction. A project is defined as a mine under SMARA if a minimum of 1,000 CYs of material is removed. An estimated 900 CY of material would be removed at this site and either compacted to reconstruct the eroded bank slope or removed from the site. The site therefore would not be defined as a mine and not require a SMARA mining permit.

**DISCUSSION**

**a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?**

**No Impact.** There are no known mineral resources of value within the proposed project area. This would be a less-than-significant impact.

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

**No Impact.** The project will not result in the loss of any known or locally important mineral resource or recovery site and would not impede or interfere with the establishment or continuation of existing mineral

extraction operations. The levee site locations are urban in nature or associated federal levees. Because construction of the levee improvements are not envisioned as an area for future mining activities, the proposed project would not significantly affect locally important mineral resources. This would be a less-than-significant impact.

## NOISE

THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XI. Noise.</b>				
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 in other applicable local, State, or federal standards?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This section includes a description of ambient-noise conditions, summary of applicable regulations, and an analysis of potential short-term construction and long-term operational-source noise impacts of the proposed project. Mitigation measures are recommended as necessary to reduce significant noise impacts to a less than significant level.

## ENVIRONMENTAL SETTING

All project sites are located in San Joaquin County however, each site differs in noise-sensitive land uses<sup>1</sup> in the vicinity. The Stockton area site at RM 41.4L is located in an isolated area next the wastewater treatment plant with the nearest sensitive receptor across the river approximately 0.6 miles at the office building of the plant. Noise-sensitive land uses generally include those uses where exposure would result in adverse effects (e.g., sleep disturbance, annoyance), as well as uses where quiet is an essential element of their intended purpose. Residences are of primary concern because of the potential for increased and prolonged exposure of individuals

to both interior and exterior noise levels. Other sensitive land uses include hospitals, convalescent facilities, parks, hotels, churches, libraries, and other uses where low interior noise levels are essential.

The RM 42.1R site under the Highway 4 Garwood Bridge is 680 feet from the nearest residence. The nature of work at this site, repair of failing grouted rock and short duration of the work – approximately 6 hours, would not result in any significant noise level above the ambient highway noise.

The repair sites at RM 42.5R and RM 42.8 are as close as 680 feet and 800 feet, respectively to housing. The Van Buskirk Municipal golf course is in between these sensitive receptors much of the repair area. At the southern site at Durham Ferry, RM 71.5R, the nearest sensitive receptors are rural residences at about 750 feet away.

The existing noise environment within the project vicinity is primarily influenced by surface-transportation noise emanating from vehicular traffic on nearby roadways (e.g., Highway 4), the Union Pacific Railroad, routine agricultural activities (e.g., use of heavy-duty farm equipment). Intermittent noise from outdoor activities at the surrounding residences (e.g., people talking, operation of landscaping equipment, car doors slamming, and dogs barking) though minor, also influences the existing noise environment. One of the dominant noise sources in the vicinity of the Stockton area sites is vehicular traffic on nearby roadways. Traffic on Highway 4 contributes the highest background noise levels at the project site and vicinity.

The Stockton Municipal Code for Noise Standards Division 16-340 (City of Stockton, 2004) limits construction and loading and unloading operations to between 7:00AM and 10 PM. The code sets standards for acceptable noise levels that are measured at the property line of the nearest sensitive receptor. A separate standard is set for transportation-related noise and for Land Use-related noise. However, the same Code also includes in Section 16-340.020 – Activities Exempt from Noise Regulations.

This section exempts:

- F. **Public health and safety activities.** *All transportation, flood control, and utility company maintenance and construction operations at any time on public rights-of-way, and those situations that may occur on private property deemed necessary to serve the best interest of the public and protect the public’s health and well being....*

The project purpose is a flood control-related activity and sites at RM 41.RM 4L, RM 42.1R, RM 42.5R and RM 42.8R are all located on property owned by the City of Stockton and may be exempt from Noise Standard under the Municipal Code located below in Table 6. However, the repair site at RM 71.5L is outside the Stockton City limits and other codes may apply.

<b>Table 6 Stockton Municipal Transportation-Related Noise Standards</b>		
<b>Noise-sensitive Land Use Type</b>	<b>Outdoor activity</b>	<b>Indoor Spaces</b>
Residential	65	45
Multi-use (with residential)	65	45
<b>Land Use-Related Noise Standards – Outdoor Activity Areas Only</b>		
<b>Noise-sensitive Land Use Type</b>	<b>Outdoor activity</b>	<b>Indoor Spaces</b>
<b>Noise Level Descriptor</b>	<b>Day (7 AM – 10 PM)</b>	<b>Night (10 PM – 7 AM)</b>
Hourly equivalent sound level (Leq), dB	65	45
Maximum sound level (Lmax), db	65	45

Notes: Modeled noise levels do not consider any shielding or reflection of noise by existing structures or terrain features or noise contribution from other sources and where: ► A-Decibel (dBA) is a measure on a logarithmic scale which indicates the squared ratio of sound pressure to a reference sound pressure.

## DISCUSSION

- a) **Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, State, or federal standards?**

### **Short-Term Construction Source Noise**

**Less than Significant with Mitigation.** Construction activities at RM 41.4L, RM 42.5R, RM 42.8R and RM 71.5R would include site preparation (e.g., excavation, grading, and clearing), material transport, levee or bank slope reconstruction, agricultural or washed sand placement, plant establishment, and other miscellaneous activities. On-site construction equipment would include graders, dozers, and excavators. Noise levels for individual equipment can range from 79 to 101 dBA at 50 feet, as indicated in **Table 7**.

Type of Equipment	Noise Level in dBA at 50 feet	
	Without Feasible Noise Control	With Feasible Noise Control <sup>1</sup>
Pile Driver	101	95
Dozer or Tractor	80	75
Excavator	88	80
Scraper	88	80
Front-end Loader	79	75
Backhoe	85	75
Grader	85	75
Crane	83	75
Truck	91	75

<sup>1</sup> Feasible noise control includes the use of intake mufflers, exhaust mufflers, and engine shrouds in accordance with manufacturers' specifications. Sources: EPA 1971, FTA 2006

Noise Level (dBA)	Outdoor Activity	Indoor Activity
90+	Gas lawn mower at 3 feet, jet flyover at 1,000	Rock Band
80-90	Diesel truck at 50 feet	Loud television at 3 feet
70-80	Gas lawn mower at 100 feet, noisy urban area	Garbage disposal at 3 feet, vacuum cleaner at 10 feet
60-70	Commercial area	Normal speech at 3 feet
40-60	Quiet urban daytime, traffic at 300 feet	Large business office, dishwasher next room
20-40	Quiet rural suburban nighttime	Concert hall (background), library, bedroom at night
10 - 20		Broadcast/ recording studio
0	Lowest threshold of human hearing	Lowest threshold of human hearing

Source: modified from Caltrans Technical Noise Supplement, 1998

The closest rural residences at RM 71.5R is 750 feet from the construction site. The closest resident to RM 42.5R and RM 42.8R are 680 and 800 feet from, respectively. The simultaneous operation of on-site construction equipment could result in combined intermittent noise levels up to 88 dB at 50 feet from the project site. Based on these noise levels and a typical noise-attenuation rate of 6 dBA per doubling of distance, distance attenuation of exterior noise levels at noise-sensitive receptors such as the rural residences at RM 71.5R result in a decrease in noise to 66 dBA without feasible noise controls. Construction-generated noise levels could be attenuated by distance to between 64 and 68 dB for the closest residences of RM 42.5 and RM 42.8R, respectively.

Windows and building facades typically reduce interior noise levels by 15 dBA and air conditioning even further. (Lipscomb and Taylor 1978). Thus, inside the residences noise levels from project construction would drop to between 49 and 53 dBA. Outside noise levels are close to compliance and use of noise control on equipment would bring noise levels within acceptable ranges for interior noise. Construction would take place in August, September and October when air conditioning would reduce noise levels further.

Construction of the project would also result in a short-term increase in traffic on the local area roadway network, but this increase would not be sufficient to increase traffic noise levels. It is expected that up to 50 daily trips (consisting of 32 haul and 18 employee trips) would occur during the maximum construction activity periods. Construction-related traffic along daily haul truck trips identified in figures 2, 3 and 4 and spread over several sites would result in minimally added traffic noise that would not increase the overall traffic noise levels a significant amount.

In most cases, the local noise ordinance contains standards for residential uses affected by construction source noise. Included in these ordinances are provisions that noise from construction activities that do not occur during the more noise-sensitive hours (e.g., evening, nighttime, and early morning) are exempt from the provisions of the applicable ordinances.

#### **Mitigation Measure Noise-1: Maintain and Equip Construction Equipment with Noise Control Devices.**

Construction equipment shall be properly maintained and equipped with all feasible noise control, such as mufflers, in accordance with manufacturers' specifications.

#### **Mitigation Measure Noise-2: Limit Construction to the Hours of 6:00AM to 8:00 PM**

Construction activities shall be limited to the hours of 6:00 a.m. to 8:00 p.m. Monday thru Friday, and 8:00 a.m. to 5:00 p.m. on Saturdays, during which times such noise levels from activities are typically exempt...

#### **Mitigation Measure Noise-3: Designate a Disturbance Coordinator to Receive All Public Complaints.**

A disturbance coordinator shall be designated and the person's telephone number shall be conspicuously posted around all project sites. The disturbance coordinator shall receive all public complaints and be responsible for determining the cause of the complaint and implementing any feasible measures to alleviate the problem.

Implementation of the above mitigation measures would reduce construction-generated noise levels by 15 dB to 25 dB at noise-sensitive receptors in the project vicinity. Furthermore, restriction of operation of construction-related equipment during less-sensitive daytime hours would reduce sleep disturbance and human annoyance. As

a result, short-term construction-generated noise levels would be reduced to a less-than-significant impact after mitigation.

### **LONG-TERM OPERATIONAL SOURCE NOISE**

**No Impact.** Long-term operation of the project sites would not change over existing levels of effort. No new maintenance activities beyond existing conditions would be created, and existing maintenance operations would continue with the repaired levees. Thus, long-term stationary source noise levels would be equal to existing conditions. In addition, the long-term operation of the project would not create increases in vehicle traffic on the local roadway system. As a result, there is no impact.

**b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?**

**Less than Significant.** Construction activities have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and operations involved. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. On-site construction equipment would include graders, dozers, and excavators but no pile drivers. The construction would occur on the waterside and behind the levee, from any sensitive receptors and large proportion of the rock dropped that has the potential for creating vibration would occur below the water. The exposure or generation of excessive groundborne vibrations or noise levels is unlikely given types of equipment used, the distance to sensitive receptors, and the ability of the levee and in-water work to lessen the vibrations, therefore the impact is less than significant. The long-term operations and maintenance of the project would not include any vibration sources; consequently there would be no impact from long-term operations and maintenance.

**c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?**

**No Impact.** The long-term operation of the project would not include any new major stationary noise sources. No new maintenance activities beyond existing conditions would be created, and existing maintenance operations would continue with the new levees. As a result, there is no impact.

**d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?**

**Less than Significant with mitigation.** The Stockton area sites are exempt from City of Stockton noise ordinances and levels of noise at RM 71.5R in the unincorporated area of the County would occur during specific work hours (Mitigation Measure Noise -2) and associated with construction activity and not increase ambient noise level. Therefore the impact would be less than significant.

**e, f) 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, and 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?**

**No Impact.** The project area is not located within 2 miles of an airport land use plan or a public airport, or in the vicinity of a private airport. New Jerusalem Airport is the closest private airport, is located more than 2 miles to the west of the RM 71.5R project site. . Given the distance from these airports and that the project does not include the development of any noise-sensitive receptors, the project would not expose people residing or working on the project site to excessive noise levels. The project would have no impact from aircraft source noise.

## POPULATION AND HOUSING

THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XII. Population and Housing.</b> 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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This analysis documents the existing population and housing condition in San Joaquin County and in Stockton. It presents estimates of changes to those conditions that could be created with implementation of the proposed project, or changes that could trigger adverse physical effects in the region.

## ENVIRONMENTAL SETTING

### POPULATION

The project sites are located in San Joaquin County with a population 670,900 (2007, U.S. Census Bureau). Four of the five repair sites are located in the incorporated area of the City of Stockton with a population of 290,141 (California Department of Finance, 2009). Stockton grew in populated approximately 41 percent since 1990. The fifth repair site at RM 71.5R is in the unincorporated rural area of the county.

### HOUSING

San Joaquin County experience tremendous growth in housing construction during the last decade with increases of 19 percent between 200 and 2007. Housing units in cities such as Tracy increased a phenomenal 142 percent in the last 20 years. However, with the current mortgage crisis hitting this has slowed considerably and the Stockton area market was designated one of the worst in the US by Fortune Magazine.

## DISCUSSION

- 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)?**

**No Impact.** The proposed repairs would not involve the construction of new homes or businesses or the extension of roads or infrastructure. Construction would only occur on the waterside of levees and landside staging areas on industrial or undeveloped land. Repairs to the levees would only restore flood protection to design levels and not

increase the level of flood protection that would allow additional growth. The proposed project would benefit the community as a whole by reducing the level of flood risk. Implementation of the proposed project would have no effect on current and/or planned population growth patterns within San Joaquin County and would not affect the population goals as outlined in the County General Plan. Therefore, the proposed project would have a no impact on population growth in the area, either directly or indirectly.

**b) Displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere?**

**No Impact.** Because the construction of levee repairs would not go through any existing development, it would not displace any existing housing or disrupt or divide an established community. Therefore, the proposed project would have no impact on housing.

**c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?**

**No Impact.** Because the construction of the levee repairs would not go through any existing development, it would not displace people. The Proposed project would benefit the project vicinity and the community as a whole by reducing the level of flood risk. Therefore, the proposed project would have a no impact on population.

## PUBLIC SERVICES

THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XIII. Public Services.</b>				
Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## ENVIRONMENTAL SETTING

### FIRE PROTECTION

The Stockton area sites are served by the Stockton Fire Department with the nearest station at 1818 S. Fresno Avenue less than a mile from the Highway 4 Garwood Bridge. The Deuel Vocational Institution Fire Department is located less than 5 miles due west from the RM 71.5 site.

### POLICE SERVICES

The City of Stockton Police and the San Joaquin County Sheriff provides law enforcement services to the City of Stockton and unincorporated areas of San Joaquin County. The nearest Stockton Police Station is located at 425 N El Dorado St, 2.7 mile from the Highway 4 Garwood Bridge. The Tracy Police Department has a joint facility with the Tracy Fire Department approximately 8 miles due west from the RM 71.5 site.

### SCHOOL FACILITIES

The Stockton area sites beneath and south of Highway 4 (RM 42.1R, 42.5R and 42.8R) are less than one mile away (0.7 miles) from the San Joaquin Elementary School located on Fresno Ave and the repair site at RM 71.5 R is within a half a mile of the Durham Ferry Outdoor Education Center that contains the Venture Academy Middle and High School located on S. Airport Way. No schools are located near the RM41.4L site.

**DISCUSSION**

- a) **Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services: fire protection, police protection, schools, parks or other public facilities.**

**No Impact.** The proposed project does not include proposals for new housing. Therefore, the proposed project would not generate students or increase demands for school services or facilities. The proposed project would not increase demands for fire protection, sheriff services, or other public facilities because the proposed project would not include new structures, such as housing or businesses, or indirectly increase housing or businesses in the project area. The proposed levee repairs would not change the type or intensity of land uses in the area; therefore, the demand for fire and sheriff protection services would be the same for the proposed project as that currently provided on-site. Emergency response services would be unhampered during project construction and operation. Nonetheless, plans to ensure the continuation of emergency response services during construction would be incorporated into final project specifications. Because the proposed project would use existing public services and no additional services or changes to existing services would be required, the proposed project would have no impact on public services.

**RECREATION**

<b>THRESHOLDS OF SIGNIFICANCE</b>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XIV. Recreation. Would the project:</b>				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**ENVIRONMENTAL SETTING**

Three of the five sites are located on the waterside of the levee adjacent the City of Stockton’s Van Buskirk Park Golf Course. The southern site at RM 71.5R is located approximately 2 miles north of the San Joaquin River National Wildlife Refuge and 4 miles west of Caswell State Park. The repair site at RM 41.4L is not located near any park facility. The existing levees are used as access for fishing along the San Joaquin River.

**DISCUSSION**

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

**No Impact.** No increase in use of the Van Buskirk Park Golf Course following repairs at RM 42.4R, RM 42.5R and RM 42.8 will occur. The Golf Course greens are on the landside of the levee and the levee is “out-of – bounds” for golf play. The levees cannot be accessed by private vehicles as they are gated. Fishing and recreational use of the levees and rivers is by foot traffic or boat. The levee repairs will not increase such recreational uses. The national and State parks would not be affected by repairs due to the distance separating them from the southern repair site. Therefore there would be no impact.

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

**No Impact.** The proposed project does not include proposals for new housing, recreational facilities, or recreational resources. Because there would not be any additional residents generated by the proposed project or increased access to existing recreational facilities, the proposed project would not increase demands on parks or other recreational facilities, and would not result in accelerated physical deterioration of existing recreational facilities. The proposed project would have no effect on recreation.

# TRANSPORTATION/TRAFFIC

THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XV. Transportation/Traffic. Would the project:</b>				
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exceed, individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## ENVIRONMENTAL SETTING

### STATE HIGHWAYS

State Highway 4 and I-5 are the primary highways in the Stockton area project vicinity. Highway 4 provide and crossed the Garwood Bridge over the San Joaquin River and the repair site at RM 42.1R. I-5 provides north-south circulation to the east of the Stockton area sites. I-5 and State Highway 99 are the major highways to the west and east of the RM 71.5R site, respectively.

### COUNTY ROADWAYS

The RM 71.5R site is directly served by County Road J3 also called S. Airport Way and by J4, Kasson Road. The Stockton sites are in the incorporated area of Stockton and not serviced by any major County road. Access to the sites near RM 42.1, RM 42.5 and RM 42.8 will be through adjacent neighborhood streets. Access to RM 71.5R from S. Airport Way would use the entrance road of the San Joaquin County Durham Ferry Outdoor Education Center.

## TRAFFIC TYPES AND VOLUMES

Figures 2, 3 and 4 indicate the haul and access routes for all five sites. With the exception of the RM 41.4L site which is not accessible by the public and located within the wastewater facility grounds, all surface roadways within the other repair site vicinities are traveled by automobiles, trucks, motorcycles, emergency vehicles, and with the exception of I-5 and Highway 99, agricultural equipment. Highway 4, I-5 and Highway 99 are heavily traveled roadways. However, County Roads S. Airport Way and Kasson Road are two lane roads used to service local communities and farms and are lightly traveled.

## AIRPORTS

One general aviation airport and several private airports are near Stockton. The Stockton Metropolitan Airport is located approximately 6 miles from the four Stockton area sites and 15 miles from the RM 71.5R site to the south. The Harley Airport is the closest private airport to the Stockton sites, located approximately 4 miles to the east. The Tracy Municipal Airport, Mapes Ranch Airport and New Jerusalem Airport are located 10 miles, 2 ½ miles and 2.1 miles from the RM 71.5R site.

## TRANSIT

The San Joaquin Regional Transit District provides public transportation for San Joaquin County. Metro routes service the City of Stockton and Intercity and Hopper buses service the outlying communities. There are no bus routes that serve the RM 71.5R project site.

## BIKEWAYS

There are no designated bikeways within the immediate project vicinity or within the project site however bicycles may use the county roads as well as Highway 4.

## RAILROADS

The Burlington Northern Santa Fe Railroad (BNSF) track borders the RM 41.4L site to the north. It carries both freight and an Amtrak passenger line. There would be no crossing of the track by construction vehicles and the train would not cross any part of the levee repair area. There is no train service near the RM 71.5R site.

## DISCUSSION

- 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)?**

**Less-than-Significant Impact.** Construction material – stone, agricultural soils, planting materials would be brought to the site from an off-site location. A single staging area will be shared for the construction of three of the Stockton area sites for access and temporary storage of material and parking. During construction, there would be approximately 32 haul trips of approximately 30 mile round trip distances to the project site for transport of construction material during the maximum construction activity periods. The Contractor will be required to prepare a traffic management plan in conformity with CalTrans format.

There would also be approximately 18 additional vehicle trips per day for construction employee commute trips. The increased traffic due to construction of the project would be temporary and would be spread out over a 2-

month period and over the two repair areas – Stockton and Durham Ferry. Operation of the project would not require any additional vehicle trips. Maintenance and monitoring of the repair sites would be consistent with the existing maintenance and monitoring schedule for levees on the project site. The proposed project would not result in any new or different land uses or population increases. Because the increased traffic due to construction would be temporary and there would be no increased traffic due to maintenance of the levee, this impact would be less than significant.

**b) Exceed, individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?**

**Less-than-Significant Impact.** As above in a), the increased traffic due to construction would be temporary and any associated degradation in LOS would be temporary. There would be no increased traffic due to maintenance of the repaired levee. Therefore, this impact would be less than significant.

**c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?**

**No Impact.** The proposed project would not change air traffic patterns or increase traffic levels. Therefore, there are no impacts to air traffic patterns.

**d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

**No Impact .** The proposed levee repairs would be a repair of an in-place levee and change the design. Repairs would be consistent with USACE standards and designs and would not cause an increase in hazards due to design features, thus there would be no impact.

**e) Result in inadequate emergency access?**

**Less-than-Significant Impact.** Emergency access to the project site would be maintained at all times, including during construction. Therefore, the project sites would not reduce response times for emergency services, such as fire protection, police, and ambulance. This would be a less-than-significant impact.

**f) Result in inadequate parking capacity?**

**No Impact.** Parking for construction and crew vehicles would be provided within proposed construction staging areas. Therefore, no impact to parking capacity in the project area would occur.

**g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?**

**No Impact.** Implementation of the project would not interfere with San Joaquin Regional Transit District routes, the BNSR, or any bikeways in the project vicinity. Therefore, there is no impact to alternative transportation.

## PUBLIC UTILITIES AND SERVICE SYSTEMS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XVI. Utilities and Service Systems.</b> Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, State, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This section provides an overview of utilities and service systems in the project vicinity, including water supply, wastewater service, solid waste management, and storm water drainage. Impacts are evaluated in relation to increased demand for utilities and service systems associated with the proposed project.

### ENVIRONMENTAL SETTING

The project site is located in San Joaquin County with four sites located in the urban boundary of Stockton. Within the project site, there are no major utility corridors. Existing Pacific Gas and Electric Company (PG&E) power line and power poles are located on the landside of all the urban sites and also near the rural location of the

RM 71.5R site. The community and golf course are served by municipal water and sewer and the RM 41.4L site is located near the wastewater treatment plant and various pipes associated with that facility. It is unknown but probable that the residents in the unincorporated area next to RM 71.5R site<sup>3.9L</sup> have septic systems and wells that eliminate the need for water and sewer mains. Utilities such as electrical transmission lines, gas pipelines, and communications lines run primarily along the major roads through the urban project area.

## DISCUSSION

**a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?**

**No Impact.** The proposed project would not involve the construction of new homes, businesses, or other uses that could generate any new source of wastewater. Therefore, no impact would occur related to exceeding any applicable wastewater treatment requirements.

**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?**

**No Impact.** Construction of the levee repairs would not create any new demands for water or wastewater treatment.

**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?**

**No Impact.** The proposed project would not include construction of impermeable surfaces for road construction, nor generate additional storm water runoff, requiring the need for new storm water drainage facilities. A SWPP will be prepared as part of RWQCB General Construction Storm Water Permit (NPDES).

**d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?**

**No Impact.** Construction or operation of the project would not create any new demands for water supply. Water needed for irrigation of landscape would be responsibility of the landscape contractor and would only be required on a temporary basis during plant establishment period. The contractor would procure such supplies from existing sources. Therefore, no impact would occur related to water supply or expanded entitlements.

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

**No Impact.** The proposed project would not involve the construction of new homes, businesses, or other uses that could generate any new source of wastewater. Therefore, no impact would occur related to the provision of wastewater treatment.

**f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?**

**No Impact.** The proposed project could potentially generate up to 900 CY of soil from excavation to create a

more stable slope of the berm at RM 71.5R. The soil would be taken from the site only if it were not suitable for compaction to reconstruct the slope where the river has encroached or for use as a planting medium. The soil would be used off site for construction fill or other end uses and not likely end up in a solid waste disposal area therefore not generate any additional solid waste or create a demand for solid waste disposal capacity. Therefore, no impact would occur related to solid waste systems.

**g) Comply with federal, State, and local statutes and regulations related to solid waste?**

**No Impact.** The proposed project would not generate any additional solid waste, create a demand for solid waste disposal capacity, or cause any conflict with laws or statutes that relate to solid waste. Therefore, no impact would occur related to compliance with solid waste statutes and regulations.

## MANDATORY FINDINGS OF SIGNIFICANCE

THRESHOLDS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XVII. Mandatory Findings of Significance.</b>				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Authority: Public Resources Code Sections 21083 and 21087.

Reference: Public Resources Code Sections 21080(c), 21080.1, 21080.3, 21082.1, 21083, 21083.3, 21093, 21094, 21151; *Sundstrom v. County of Mendocino*, 202 Cal.App.3d 296 (1988); *Leonoff v. Monterey Board of Supervisors*, 222 Cal.App.3d 1337 (1990).

### DISCUSSION

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

**Less than Significant With Mitigation.** The project would not substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self sustaining levels; threaten to eliminate a plant or animal community; reduce or restrict the range of rare or endangered plants or animals; or, eliminate important examples of the major periods of California history or prehistory. As discussed in the analyses provided in this Initial Study, mitigation measures are proposed to reduce all potentially significant impacts to biological and cultural resources, as well as to other issue areas, to less-than-significant levels.

- 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.)**

### **Past, Current and Probable Future Projects**

In 2008, DWR repaired three critical erosion sites in the Stockton area under the San Joaquin Flood Protection Project (SJFPP), the program under which the Project is proposed for construction. They were located at SJ River, RM 42.3 Right, on Paradise Cut LM 3.86 Left and Mormon Slough LM 33 Right. All sites were completed in November 2008 with the exception of additional plantings required at RM 42.3 which will be completed in spring 2009.

The five proposed repair sites are the final critical erosion sites identified in response to the Governor’s State of Emergency in 2006. There are a remaining 60 erosion sites along the federal Lower San Joaquin and Tributaries Flood Control Project. The SJFPP is restricted to erosion repairs along federal levees encompassed by this system. Many of these levees are located in the extensive bypass system that is greater in length than the discontinuous levee segments of the mainstem San Joaquin River. Repair priority uses a cost-benefit factor such that the more urban and developed levees will receive repairs before those levee protecting less developed area. Most erosion lengths are under 300 with a great many much shorter. The authority of this program is still to be determined. If it continues, repairs will continue for the duration of the State Bond IE funding, until approximately 2016 or until possibly superseded by the State Central Valley Plan of Protection (2012). This horizon is also applicable to DWR levee programs below.

DWR is evaluating more than 300 miles of urban project levees, state and federal levees through the Urban and Non urban Levee Evaluations Programs. Much of the geotechnical evaluation of levees and levee foundations is done by relatively straightforward methods of drilling, boring, and pushing cone probes to collect samples and evaluate subsurface soil conditions typically at 1,000-ft intervals along the levees. Additional landside explorations are also being performed to better define existing subsurface conditions. These evaluations may result in repair efforts where levee deficiencies such as seepage or undersizing are noted with remedies including slurrywalls, cutoff walls, seepage berms and reconstruction.

An additional DWR repairs program known as the DWR Levee Stability Program will respond to the findings of levee evaluations programs. On the near horizon is the remediation of seepage through construction of a slurrywall to be constructed in portions of the SJ River LM 41.4L site and along the same repair area of the RM 42.5R and 42.8R repair reach potentially in 2010 or 2011.

The proposed repair sites are all located in the legally defined Secondary Delta. DWR’s Bay-Delta Levees Branch administers the Delta Levees Flood Protection Program as authorized by the Water Code Sections 12300 thru 12318 and 12980 thru 12995. This is a grants program that works with more than 60 reclamation districts in the Delta and Suisun Marsh to maintain and improve the flood control system and provide protection to public and private investments in the Delta including water supply, habitat, and wildlife. The program, through its two components; Delta Levees Maintenance Subventions Program and Delta Levees Special Flood Control Projects, works with the local agencies to maintain, plan and complete levee rehabilitation projects. One of the requirements to qualify for available funds is the project to result in no net loss of habitat in the Delta.

The State of California has embarked on a statewide plan for flood control known as FloodSafe that encompasses the entire Central Valley. This plan is likely to include a wider range of flood protection measures as well as a broader approach to species and habitat protection that includes creation of floodplain through construction of setback levees. The goal of the State is to balance impacts from public safety actions with protection of

environmental values. This would also include the creation of large mitigation areas in anticipation of needs. FloodSafe will produce a Central Valley Flood Protection Plan (CVFPP), scheduled for completion in 2012. In the few intervening years before FloodSafe is institutionalized, DWR will continue to focus repairs of erosion or seepage sites originally identified in the State reconnaissance of the San Joaquin River system.

The USACE's CalFed Levee Stability Program has developed action strategies to address levee improvements to be carried out through 2010 under the CALFED Act (PL 108-361, 2004), which authorizes the appropriations of a total of \$90 million from FY 2005 through FY 2010 for the Federal share of levee project categories. These strategies are known as the short-term CALFED Levee Stability Program, whose purpose is to move quickly to implement high priority levee reconstruction projects within the Section 205 Small Flood Control Projects funding limit (\$7 million per project and assuming that cost-sharing is 65 percent Federal and 35 percent non-Federal). The long-term strategy for the Delta levees will be developed as part of the Sacramento-San Joaquin Delta Islands and Levees Feasibility Study. CALFED Act projects include (1) reconstructing Delta levees to base level protection; (2) further enhancing the stability of levees that have State-wide importance; (3) developing best management practices to control subsidence; (4) developing a Delta levee emergency management and response plan to enhance emergency and readiness response; (5) developing a DRMS after assessment of the consequences of potential Delta levee failures; (6) reconstructing Delta levees using dredged materials to the maximum extent practicable; (7) coordinating levee projects with existing levee and water resources projects; and (8) evaluating and rehabilitating the Suisun Marsh levees, if appropriate.

An additional levee repair program under the USACE is the PL 84-99 Rehabilitation and Inspection Program which brings back levee designs to pre-flood conditions. The program responds to episodic federally declared food disaster events and is dependant on Congressional funding authorizations.

Although these past, current, or probable future projects identified in the project vicinity that, when added with project-related impacts, could result in cumulatively considerable impacts. No cumulatively considerable impacts would occur with development of the project. As discussed in the analyses provided in this Initial Study, mitigation measures are proposed to reduce all potentially significant impacts to less-than-significant levels. It is expected that the work would have short-term adverse effects on riparian habitat and aquatic habitat values, however, environmentally sensitive designs and mitigation measures similar to those currently used will be integrated into the project to fully compensate for these effects.

All DWR levee programs, including the SJFPP will ultimately be incorporated into the CVFPP. These programs have made commitments to avoid irreversible repairs that would interfere with a larger more system-wide approach to balancing environmental stewardship with public safety concerns under FloodSafe. All DWR levee repair work will use the USACE Standard Assessment Methodology (SAM) to determine longer term impacts and benefits. Off-site mitigation will be incorporated to make up for deficits that may be identified by the SAM model.

Because the project would implement site-specific measures that benefit fisheries and aquatic habitat in the long-term, the incremental and cumulative effect of the proposed actions on riparian and fisheries resources is considered less than significant with mitigation.

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

**Less-than-Significant Impact.** No project-related environmental effects were identified that would cause substantial adverse effects, after mitigation was proposed, on human beings. As discussed herein, the project has the potential to create temporary significant impacts related to air quality, noise, and hazardous materials during construction. However, with implementation of required mitigation measures, these impacts would be reduced to less-than-significant levels.

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APPENDIX A SITE PHOTOGRAPHS



SJ RM 41.4L – View looking downstream

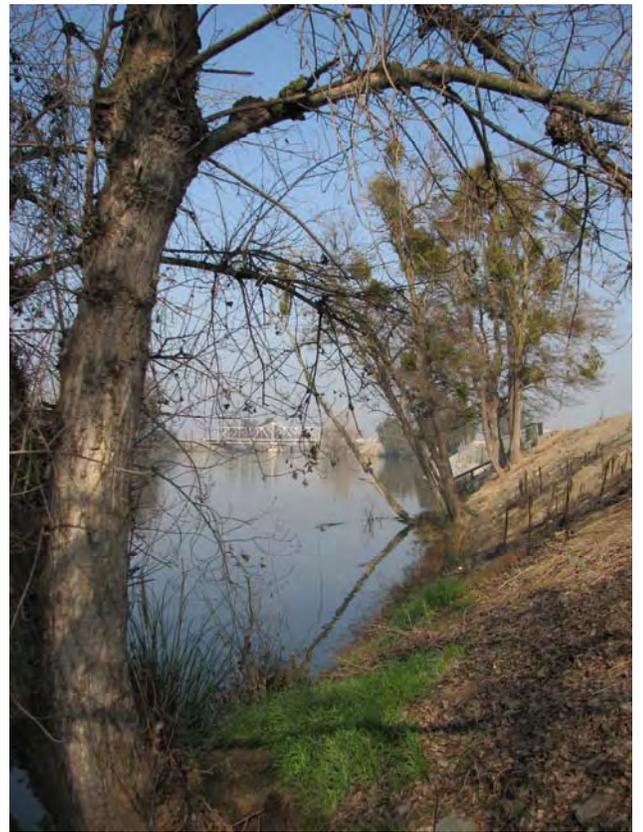


RM 42.1R: View downstream under Bridge





**RM 42.5R Looking Downstream**



**RM 42.5R Looking Downstream, lower slope**



**RM 42.8R Looking upstream –Typical Section A**



**RM 42.8 R – Section B**



**RD 2064- SJ RM 71.5R – View looking downstream from upstream end**



**RM 71.5R – Existing rock at toe**



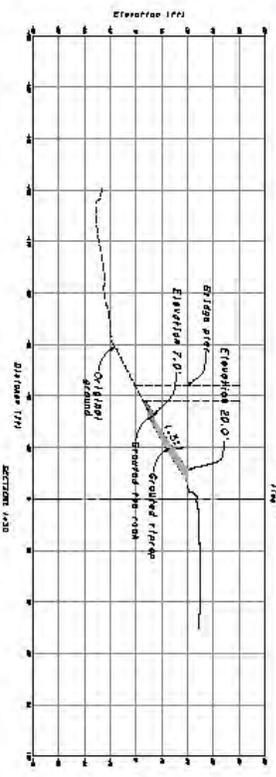
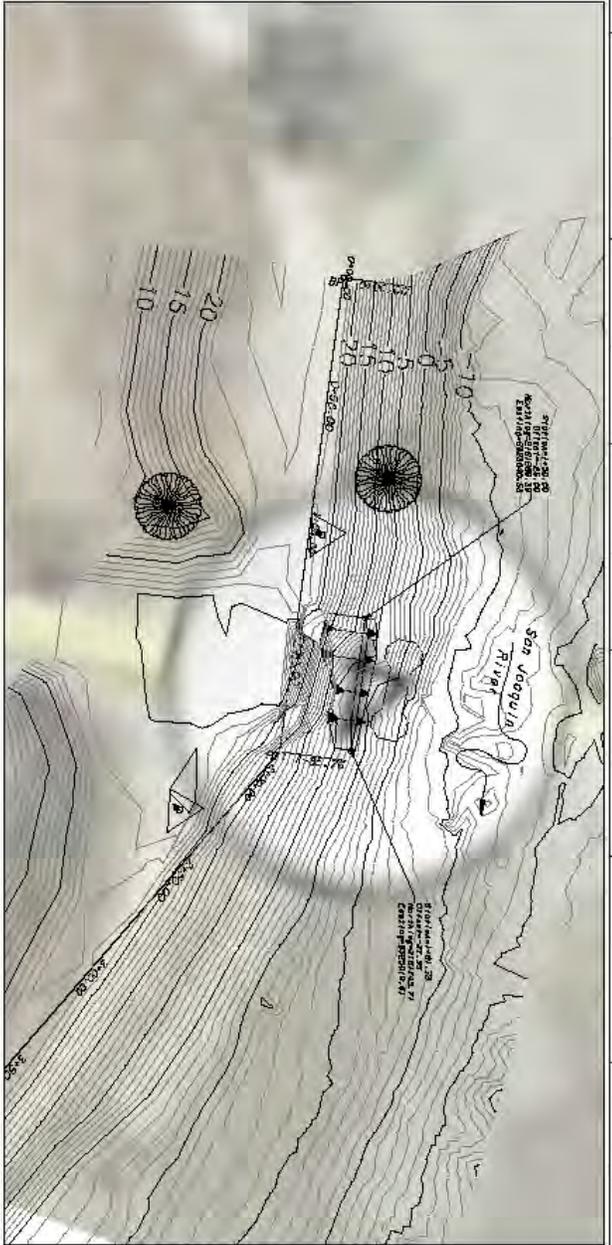
**View looking upstream from downstream end**



APPENDIX B  
PLAN VIEWS AND CROSS-SECTIONS OF REPAIRS







1" = 50'  
 HORIZONTAL SCALE  
 1" = 10'  
 VERTICAL SCALE  
 DRAWN ONLY  
 SUBJECT TO REVISION

PRELIMINARY DEPARTMENT OF WATER RESOURCES DIVISION OF FLOOD MANAGEMENT		STATE OF CALIFORNIA THE REGIONAL OFFICE DIVISION OF FLOOD MANAGEMENT		STATE ENGINEERING DESIGN SERVICE PROJECT SAN JOAQUIN RIVER BRIDGE AND PIERS AT STA. 42+18 SAN JOAQUIN RIVER RM 42+18		SHEET NO. DRAWING NO. DATE	
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