Initial Study
and Mitigated Negative Declaration

Recoat Mokelumne Aqueducts Phase 8 - Slough Crossings Project

East Bay Municipal Utility District

EBMUD

May 2010

EBMUD

May 7, 2010

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

Recoat Mokelumne Aqueducts Phase 8 - Slough Crossings Project

Project Title: Recoat Mokelumne Aqueducts Phase 8 - Slough Crossings Project

Lead Agency: East Bay Municipal Utility District (EBMUD)

Project Location: The project is located at four sites: Indian Slough in Contra Costa County and Trapper Slough, Holt Bend, and Black Slough in San Joaquin County.

Project Description: EBMUD operates the Mokelumne Aqueducts, three large-diameter steel pipelines that transport water approximately 90 miles from the Sierra Foothills to treatment facilities and raw water reservoirs in the EBMUD service area. As the Aqueducts cross the Delta, they are elevated and subjected to the regional environment that has been characterized as moderately to extremely corrosive to ferrous metals. The Aqueducts are protected from corrosion by a coating system that requires periodic maintenance and occasional replacement. This project consists of recoating sections of the Aqueducts at the following sites: Indian Slough (span of about 350 linear feet), Trapper Slough (about 2,000 linear feet), Holt Bend (about 2,500 linear feet) and Black Slough (about 30 linear feet). The cumulative length of the pipelines to be recoated is approximately 16,400 linear feet (3.1 miles). Recoating activities include abrasive blasting to remove the existing coating system and application of the new coating system. A sealed containment structure equipped with a negative-air-pressurized-ventilation system and dust filters will be used to ensure that coating-related fugitive dust are not released into the environment.

Project Objective: The project objective is to prevent corrosion of the Mokelumne Aqueducts by replacing the protective coating system. The surrounding environment has degraded the existing coating system such that replacement is necessary to safeguard the structural integrity of these vital water transmission pipelines.

Schedule: Key milestones for project implementation are summarized as follows.

Complete environmental review	July 2010
Begin construction	April 2011
Complete construction	November 2013

Environmental Determination: Pursuant to the requirements of the California Environmental Quality Act, an Initial Study has been prepared for the project. Based on the results of that study, it has been determined that the project has the potential to generate biotic impacts related to wetlands, habitat and listed species, but implementation of mitigation measures will reduce potential impacts to a level of insignificance. Based on this assessment, the project will not generate a significant adverse impact on the environment and a proposed "Mitigated Negative Declaration" has been prepared.

Environmental Mitigation: The recoating activities of the Mokelumne Aqueducts have the potential for air quality, biological resources, cultural resources, greenhouse gas emission, hydrology/water quality, and noise impacts at the project sites. Incorporated as part of the project design, the containment system will be the primary method for controlling emissions and reducing potential impacts to less than significant levels. The secondary method consists of implementing standard design and construction practices through contract specifications to ensure that short-term construction-related impacts will be less than significant. The tertiary method includes avoidance and mitigation measures such as the reduction of the painting season to avoid special-status species, pre-construction surveys to identify the presence of

species, and the development of buffer zones and barriers to separate construction activities from biological resources. The combination of project design features, standard practices, and mitigation measures will ensure that potential impacts from this project will be less than significant.

Public Comment/Review: The Mitigated Negative Declaration and Initial Study are available for review at:

- East Bay Municipal Utility District, 375 11th Street, Oakland CA 94607
- EBMUD website (http://ebmud.com/)
- EBMUD Pardee Center, 3535 Sandretto Road, Valley Springs, CA 95252
- San Joaquin County Library, Cesar Chavez Center, 605 North El Dorado Street, Stockton, CA 95202
- Contra Costa County Library, Brentwood Branch, 104 Oak Street, Brentwood, CA 94513

In accordance with Section 15073 of the State of California Environmental Quality Act Guidelines, this Mitigated Negative Declaration is available for public review for 30 days from May 7, 2010 through June 7, 2010. Written comments on this proposed Mitigated Negative Declaration must be received no later than close of business, 4:30 p.m. on June 7, 2010. Please address comments to Bill E. Maggiore, Senior Engineer, East Bay Municipal Utility District, 375 11th Street, Oakland, California 94607 or email to recoatmnd@ebmud.com.

Dated: 4-23-10

Xavier J. Irias
Director of Engineering and Construction

Initial Study and Mitigated Negative Declaration

Recoat Mokelumne Aqueducts Phase 8 - Slough Crossings Project

East Bay Municipal Utility District

EBMUD

May 2010

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ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
°F	degrees Fahrenheit
µg/m3	micrograms per cubic meter
AB	Assembly Bill
Aqueducts	Mokelumne Aqueducts
BAAQMD	Bay Area Air Quality Management District
BMP	Best Management Practices
BNSF	Burlington Northern Santa Fe Railroad
CAAQS	California Ambient Air Quality Standards
Cal/OSHA	California Department of Industrial Relations, Division of Occupational Safety and Health
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CH_4	methane
CIWMB	California Integrated Waste Management Board
CNPS	California Native Plant Society
CNEL	Community Noise Level Equivalent
CO	carbon monoxide
$CO_{2\ eqv}$	carbon dioxide equivalents
CO_2	carbon dioxide
CPUC	California Public Utilities Commission
CSC	California Species of Special Concern
CTP	Comprehensive Transportation Plan
CUPAs	Certified Unified Program Agencies
CVP	Central Valley Project
CY	cubic yards
dB	decibel
dBA	A-weighted decibel
DDT	dichlorodiphenyltrichloro ethane
Delta	Sacramento-San Joaquin River Delta
DO	dissolved oxygen
DOT	Department of Transportation
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
E/I	export/inflow
EBMUD	East Bay Municipal Utility District
EC	Electrical Conductivity
ECO	Environmental Compliance Officer
EHD	Environmental Health Department
GHG	greenhouse gas
GMP	Growth Management Program

GWP	Global Warming Potential
HCP	Habitat Conservation Plans
HFCs	hydrofluorocarbons
HFE	hydrofluorinated ethers
HNL	hourly noise levels
HUD	Housing and Urban Development
I-	Interstate
IPCC	Intergovernmental Panel on Climate Change
Km	kilometers
L_{dn}	Day Night Average Level
L_{eq}	equivalent continuous noise level
L_{max}	maximum continuous noise level
L_{min}	minimum continuous noise level
LOS	Level of Service
LSE	load serving entity
m/s	meters per second
MEI	Maximally Exposed Individual
MHW	Mean High Water
MLW	Mean Low Water
MND	Mitigated Negative Declaration
mph	miles per hour
MTC	Metropolitan Transportation Commission
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NCCP	Natural Community Conservation Plan
NEPA	National Environmental Policy Act
NF_3	nitrogen trifluoride
NMFS	National Marine Fisheries Service
NO	nitric oxide
NOAA	National Oceanic and Atmospheric Administration
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
O_3	ozone
OPR	Office of Planning and Research
Pb	red lead
PCB	polychlorinated biphenyls
PERP	Portable Equipment Registration Program
PFCs	perfluorocarbons
PM_{10}	respirable particulate matter
$PM_{2.5}$	fine particulate matter
ppb	parts per billion
ppm	parts per million
ppmv	parts per million by volume
project	The Recoat Mokelumne Aqueducts Phase 8 Slough Crossings Project
PSD	Prevention of Significant Deterioration

RCRA	Resource Conservation and Recovery Act of 1986
RDs	Reclamation districts
Rn	Radon
ROC	reactive organic compounds
ROG	reactive organic gas
RTP	Regional Transportation Plan
RWD	reports of waste discharge
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act of 1986
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SF_6	sulfur hexafluoride
SHPO	State Historic Preservation Officer
SIP	State Implementation Policy
SJCOG	San Joaquin Council of Governments
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_2	sulfur dioxide
SQOs	sediment quality objectives
SR	State Route
SSPC	Society for Protective Coatings
SWIS	Solid Waste Information System
SWP	State Water Project
SWPPP	Stormwater Pollution Prevention Plan
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
TPA	Transportation Planning Agency
Tri-Delta	Eastern Contra Costa Transit Authority
UPPR	Union Pacific Railroad
USACE	United States Army Corp of Engineers
USC	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VELB	valley elderberry longhorn beetle
VOCs	volatile organic compounds
WDR	waste discharge requirements
WQCA	Water Quality Control Act
WQCP	Water Quality Control Plan
WQLS	Water Quality Limited Segments

EXECUTIVE SUMMARY

Project Location

The Recoat Mokelumne Aqueducts Phase 8 – Slough Crossings Project is located at four sites: Indian Slough in Contra Costa County and Trapper Slough, Holt Bend, and Black Slough in San Joaquin County.

Project Objective

The project objective is to prevent corrosion of the Mokelumne Aqueducts by replacing the protective coating system. The surrounding environment has degraded the existing coating system such that replacement is necessary to safeguard the structural integrity of these vital water transmission pipelines.

Project Description

East Bay Municipal Utility District (EBMUD) operates the Mokelumne Aqueducts, three large-diameter steel pipelines that transport water approximately 90 miles from the Sierra Foothills to treatment facilities and raw water reservoirs in EBMUD's service area. As the Aqueducts cross the Delta, they are elevated and subjected to the regional environment that has been characterized as moderately to extremely corrosive to ferrous metals. The Aqueducts are protected from corrosion by a coating system that requires periodic maintenance and occasional replacement. This project consists of recoating sections of the Aqueducts at the following sites: Indian Slough (span of about 350 linear feet), Trapper Slough (about 2,000 linear feet), Holt Bend (about 2,500 linear feet) and Black Slough (about 30 linear feet). Recoating activities include abrasive blasting to remove the existing coating system and application of the new coating system. A sealed containment structure equipped with a negative-air-pressurized-ventilation system and dust filters will be used to ensure that coating-related fugitive dust are not released into the environment.

Project Impacts and Mitigation Measures

A summary of the potential environmental impact of the project and mitigation measures to reduce impacts to less than significant levels is presented in Appendix A, Mitigation Monitoring and Reporting Program.

CHAPTER 1
INTRODUCTION

EBMUD is responsible for providing water service for 1.3 million people in the East Bay region of the San Francisco Bay Area. Roughly 90 percent of the raw water supply comes from the 577 square-mile watershed of the Mokelumne River, which collects snowmelt from the Sierra Nevada Mountains and stores it at Pardee Reservoir in the Sierra Foothills. The water is delivered from Pardee Reservoir to the EBMUD's service area by three pipelines, known as the Mokelumne Aqueducts. While the Mokelumne Aqueducts traverse most of this distance underground, approximately 10 miles are aboveground. A coating system protects the aboveground portions of the Aqueducts from the corrosive environment of the Sacramento-San Joaquin Delta and requires periodic maintenance and occasional replacement. The aboveground Aqueducts have been undergoing an 11-phase recoating project that was initiated in 2001.

Purpose/Legal Authority

EBMUD is proposing to implement the Recoat Mokelumne Aqueducts Phase 8 – Slough Crossings Project (project). The project consists of recoating portions of the Aqueducts that cross sloughs at four sites. Recoating the Aqueducts at the slough crossings was separated from the overland phases because it was anticipated that additional environmental precautions may be warranted.

This Initial Study and Mitigated Negative Declaration (MND) for the project was prepared pursuant to the California Environmental Quality Act (CEQA) (Public Resources Code §21000 *et seq*.), and in accordance with CEQA Guidelines (California Code of Regulations §15000 *et seq*.), as amended. The purpose of the MND is to analyze potentially significant impacts on the environment and incorporate mitigation measures into the project design, as necessary, to eliminate potential impacts or reduce potential impacts to less than significant levels.

As provided in CEQA §21064.5, the MND may be prepared for a project subject to CEQA when an initial study has identified potential effects on the environment, but:

> "(1) revisions in the project plans or proposals made by, or agreed to by, the applicant before the proposed negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur, and
>
> (2) there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment."

Consistent with CEQA Guidelines, this Initial Study and MND identify potentially significant effects that could be caused by the proposed project. On the basis of the initial evaluation, it was determined that construction activities could significantly affect the environment. However,

mitigation measures are incorporated into the project that would reduce these impacts to less than significant levels. Thus, the proposed project does not require further evaluation in the form of an environmental impact report. Therefore, EBMUD proposes to adopt the MND.

Scope and Content

Based on an evaluation of the Environmental Impact Checklist in Chapter 3, the project was determined to have the potential for significant impacts in the following areas:

- Air Quality
- Biological Resources
- Cultural Resources
- Greenhouse Gas Emissions
- Hydrology/Water Quality
- Noise

Each of the above areas is discussed in detail in this document and mitigation measures are defined to reduce all potentially significant impacts to less than significant levels.

Federal Review Process

The proposed project is subject to the provisions of CEQA with EBMUD serving as the Lead Agency. The federal environmental law, National Environmental Policy Act (NEPA), applies to federal activities that are considered "major federal actions." Major federal actions include the approval of projects through an agency permit or regulator decision. Generally, NEPA applies only to the portion of project that requires a federal action. In the case of the proposed project, a federal action will be the granting of a Department of the Army permit pursuant to Section 404 of the Clean Water Act.

Project components subject to federal regulatory authority (Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act) are expected to be permitted under one or more Nationwide Permits (permits for categories of activities determined to have minimal impacts) and, because these are general permits that are already issued, NEPA has already been satisfied.

Public Review Process

In accordance with CEQA, a good faith effort has been made during the preparation of the Initial Study and MND to contact affected agencies, organizations and persons who may have an interest in this project. In reviewing the Initial Study and MND, affected persons and public agencies should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and the ways in which the significant effects of the project might be avoided or mitigated.

Comments on the Initial Study and MND may be made in writing before the end of the comment period. A 30-day review and comment period has been established in accordance with §15205(d) of the CEQA Guidelines. Following the close of the public comment period, which

ends on June 4, 2010, EBMUD will consider this Initial Study and MND and comments thereto in determining whether to approve the proposed project.

Written comments should be sent to:

Bill E. Maggiore, Senior Engineer
East Bay Municipal Utility District (M/S 701)
P.O. Box 24055
Oakland, CA 94623

CHAPTER 2
PROJECT DESCRIPTION

Project Background

The project consists of recoating the Mokelumne Aqueducts (Aqueducts) at the four sites in the Sacramento-San Joaquin River Delta (Delta). EBMUD operates the Aqueducts that consist of three large-diameter steel pipelines that transport raw water approximately 90 miles from the Sierra Foothills to treatment facilities in EBMUD's service area.

As the Aqueducts cross the Delta, they are elevated and subjected to the environmental conditions of the region, which are moderately to extremely corrosive to ferrous metals. The pipelines were painted with protective coatings to prevent corrosion of these vital infrastructure components. These coatings require periodic maintenance and occasional replacement.

Aqueduct No. 1 (a 65-inch diameter riveted steel pipe constructed in the 1920s) was installed with an asphalt-based coating system, which has been top-coated in some areas with either a latex paint or an aluminum-based paint.

In recent years, EBMUD's maintenance-painting strategy consisted of spot cleaning and priming followed by application of an epoxy-based coating to the entire pipeline. Aqueduct No. 1 has not been recoated in many years at the locations of the four sites. The elevated sections of Aqueduct No. 1 are supported by timber/concrete bent structures (Figure 2.1).

Concrete Bent Support

Figure 2.1

Aqueduct No. 2 (a 69-inch diameter pipe) and No. 3 (an 89-inch diameter pipe) were constructed in the 1940s and 1960s, respectively, and last recoated in 1976. The original coating system was a red lead primer with topcoats of leafing and non-leafing aluminum paint. The elevated sections of Aqueduct Nos. 2 and 3 are supported by steel bents (Figure 2.2).

Steel Bent Support
Figure 2.2

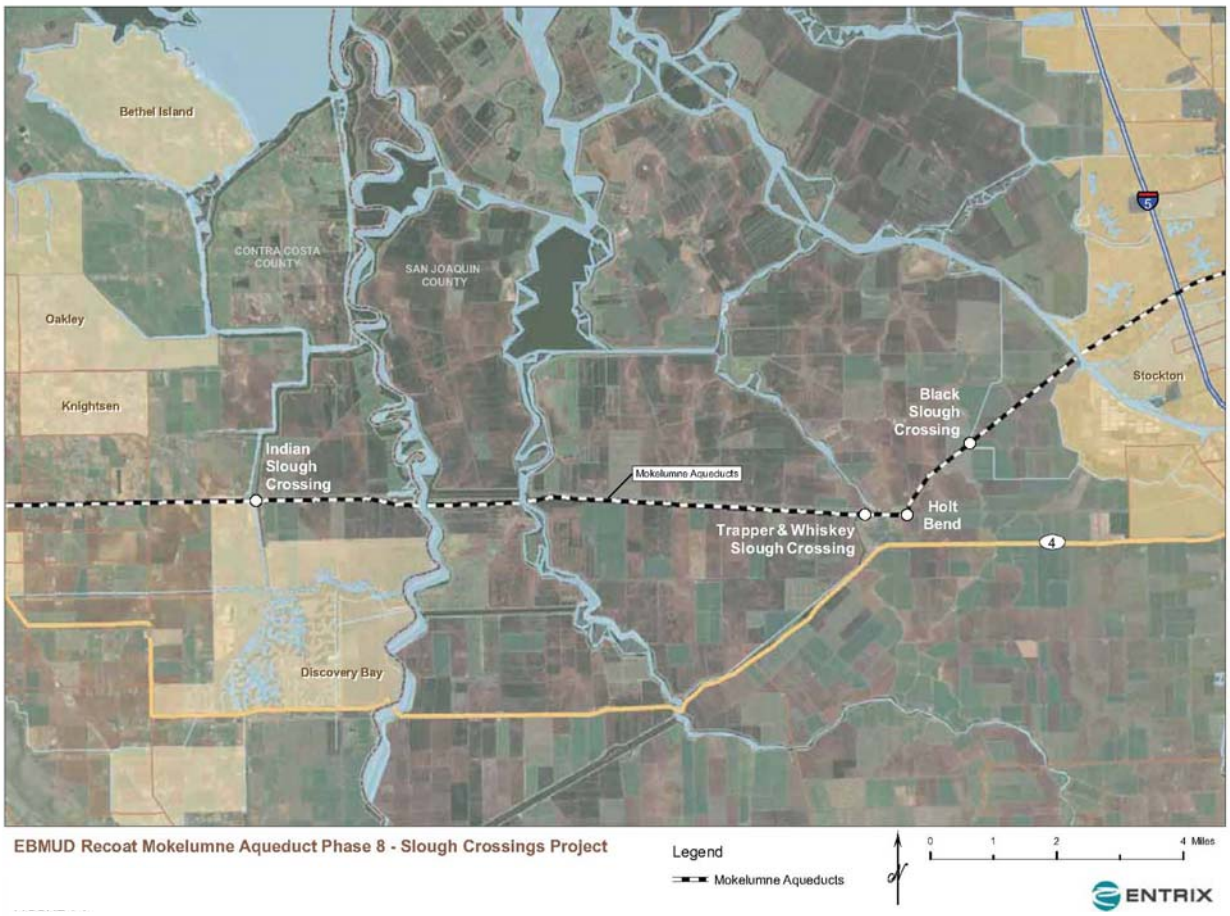
Proposed Sequencing of Work

The project consists of recoating the Aqueducts at four sites. At each site, the general sequence of construction would be site preparation, installation of the temporary containment system, abrasive blasting of the Aqueducts, recoating of the Aqueducts, removal of the temporary containment system, and restoration of the site. At Black Slough only, the pipelines would receive an additional overcoat of cement mortar. The overcoat would require a curing phase between the removal of the containment system and site restoration. The recoating activities are expected to occur at one site at a time. A smaller site, such as Black Slough, is expected to be completed within one painting season, while a larger site, such as Trapper Slough, may require more than one painting season to recoat.

Descriptions of Sites

The elevated portions of the Aqueducts cross the San Joaquin Delta for a distance of approximately 10 miles. In 2001, EBMUD began a recoating project for this 10-mile section of Aqueducts entitled the Mokelumne Aqueduct Recoating Project Phases 1 to 11. To date, Phases 1 through 7 and Phase 9, which address pipeline segments overland, are complete.

Phase 8 of the project occurs on the segments at the four sites described below (Figure 2.3). EBMUD is planning to recoat the three elevated pipelines at the sites under one contract over a three-year duration.



Aerial View of Project Locations

Figure 2.3

Indian Slough Crossing

The Aqueducts cross Indian Slough in Contra Costa County (see Figure 2.4) adjacent to, and north of, a concrete bridge on Orwood Road operated by Contra Costa County (Figure 2.5). To the north lies an active rail line. The site is adjacent to the Orwood Resort on the eastern edge of the City of Brentwood. Orwood Resort is a privately owned marina, boat launch, and camping facility and provides recreational access to the Delta. The adjacent lands are primarily rural agricultural. This water crossing is approximately 350 feet in length.

Indian Slough Crossing
Figure 2.4

Recreational boat traffic crosses under the pipes at this location and, therefore, boat traffic would be maintained. Construction would be phased by completing approximately one-half of the crossing at a time, allowing boat traffic to pass through the other half. A short length of overland pipe would be painted adjacent to the west end of the crossing to tie in with previously painted sections. Indian Slough is approximately 5 feet deep and is tidally influenced.

EBMUD's Indian Slough Wasteway is located just downstream of the crossing, and the EBMUD's Bixler Maintenance Facility is located approximately 1 mile to the west.

Aerial View of Indian Slough Crossing
Figure 2.5

All three pipes would require abrasive blasting and recoating, including the steel bents of Aqueduct Nos. 2 and 3. Aqueduct No. 1 has wooden bents at this crossing that are treated with a preservative and would not require painting. Combination air/vacuum valves, manholes, platforms, railings, and security fencing exist on the crown of each pipe. These appurtenances would also require recoating.

Prior to abrasive blasting, a containment system would be installed to prevent the release of blasting material and lead-based paint into the air and the waterway. A description of the containment system is provided in the Containment Systems and Ventilation and Electrical Power Systems sections.

The containment structure would be supported by the concrete pile caps and a work platform would be constructed under and spanning the three pipes. All heavy equipment associated with the blasting, paining, ventilation, and exhaust control systems (such as compressors, blast pots, dust collectors, and vacuum loaders) would be located on an adjacent barge and connected via flexible hoses to the containment structure.

The barge would be anchored by temporary pier spuds that allow the barge to float up and down with the tide (Figure 2.6**).** Use of the pile caps and barge to support the containment system and associated equipment would eliminate the need for dewatering. Therefore, no dewatering would occur at Indian Slough.

Barge

Figure 2.6

Construction would progress at a rate of approximately 20 feet per pipe per day based on the site constraints. For the duration of construction activities, approximately one-half of the slough crossing would be maintained to allow for boat traffic. The estimated total construction time would be about 12 weeks, including mobilization and demobilization.

Table 2.1 lists the construction equipment required for the slough crossing and estimated construction durations. Most of the equipment listed would also be used at the other sites. After construction is completed at one crossing, the equipment would be moved directly to the next site.

TABLE 2.1

INDIAN SLOUGH

	Equipment and Vehicles		Rating	Planned	Activity Schedule		
Phase or Activity	**Type**	**Category**	**BHP**	**Quantity**	**Weeks**	**Days/Wk**	**Hrs/Day**
Worker Commuting	Pickup Truck	On-road LD	n/a	40	12	5	8
All	10'x20' Connex Box (steel)	Unpowered		3	12	5	8
	Portable Johnny House	Unpowered		2	12	5	8
	6-yard Trash Dumpster	Unpowered	n/a	1	12	5	8
	10x20 Portable Shower with hot water heater	Unpowered		1	12	5	8
	Office Trailers (40x10 & 20x10)	Unpowered		2	12	5	8
	Vacuum Loader	Unpowered		1	12	5	8
	Recycle Blast Trailer	Unpowered		1	12	5	8
	Fork Lift	Off-road	125	1	12	5	8
	40 foot Flat Bed Trailer (part of containment trailer)	Unpowered		1	12	5	8
	Pickup Truck	On-road LD	n/a	3	12	5	8
	20,000 CFM dust collector	Off-road	30	1	12	5	8
	2 Ton Air Dryer	Off-road	15	1	12	5	8
	375 CFM Air Compressor	Off-road	131	1	12	5	8
	1200 CFM Air Compressor	Off-road	420	1	12	5	8
	Dozer	Off-road	150	1	12	5	8
	Water Truck (2000 gallons)	On-road HHD	n/a	1	12	5	8
	40 foot Connex trailer	Unpowered		1	12	5	8
Recycling Rig	1600 CFM Air Compressor	Off-road	560	1	12	5	8
	1200 CFM Air Compressor	Off-road	420	1	12	5	8
	185 CFM Air Compressor	Off-road	65	1	12	5	8
	8 Shower stall trailer	Unpowered		1	12	5	8
	Vacuum truck	On-road MD	n/a	2	12	5	8
Haul trucks	For hazardous material	On-road HHD	n/a	5	12	5	2
In-water equipment	Barge	Unpowered		1	12	7	24
	Skiff	Off-road	15	1	12	5	2

Trapper Slough Crossing

Trapper Slough (Figure 2.7) is located in San Joaquin County and runs from the Upper Jones Tract (Reclamation District #2039) levee easterly to Holt Road (Reclamation District #2116) (Figure 2.8). The pipelines on this site span approximately 2,000 linear feet in Trapper Slough between Bacon Island Road and Lower Jones Road. In the slough, the terrain is seasonally wet, but the pipes are typically accessible. The slough is shallow, tidally influenced, and frequently choked with water hyacinth (*Eichhornia crassipes*). The water depth varies from a shallow of 18 inches to 36 inches to as deep as 6 feet and reportedly fluctuates daily and seasonally as much as 4 feet (Free Tide Tables 2009). The bottom is uneven and may contain debris and abandoned wooden pilings. The slough's bank on the south side of Aqueduct No. 2 is heavily vegetated.

Trapper Slough Crossing
Figure 2.7

Aerial View of Trapper Slough Crossing
Figure 2.8

An access road exists on the north side of the right-of-way, extending from a gate on Cook Road several hundred feet to the west. This road provides access to the crossing, particularly Aqueduct No. 3. The adjacent lands at this location are primarily agricultural, and a rail line parallels the pipes to the north. The Whiskey Slough Marina is located just north of Cook Road.

All three pipes at this location would require abrasive blasting and recoating, including the steel bents of Aqueduct Nos. 2 and 3. Combination air/vacuum valves, manholes, platforms, railings, and security fencing exist on the crown of each pipe; and these appurtenances would require recoating. Prior to abrasive blasting, a containment system would be installed to prevent the release of blasting material and lead-based paint into the air and the waterway. Aqueduct No. 1 has concrete bents and wooden saddles in the Trapper Slough area, which would not require painting.

As practicable, a floating platform (Figure 2.9) would be used at Trapper Slough to access Aqueducts and serve as a work platform for constructing the containment structure. As practicable, the containment structure would be built/supported on the pile caps, but depending on site conditions, the containment structure may be supported off the ground with cribbing or scaffolding. Supporting equipment (e.g., compressors, blast pots, dust collectors, and etc.) would be placed on the nearby access road or on floating platforms. If site conditions (e.g., insufficient water level or space) render the floating platform impracticable, then the platforms would be placed on the slough bed or the site would be dewatered. The dewatering would be accomplished using temporary water-filled rubber dams as described in the Dewatering Method section. Dewatering could potentially result in environmental impacts and may require additional mitigation measures to reduce impacts to less than significant levels. Any additional mitigation measures for potential impacts from dewatering would be developed with the appropriate public agencies during the permitting process.

Floating Platform
Figure 2.9

Construction would progress at a rate of about 50 feet per pipe per day in the slough. The total construction time would be about 18 weeks, including mobilization and demobilization time, and would require several construction seasons (summers) to complete. See Table 2.2 for construction equipment and estimated construction duration.

TABLE 2.2

TRAPPER SLOUGH
(2,000 feet In Slough)

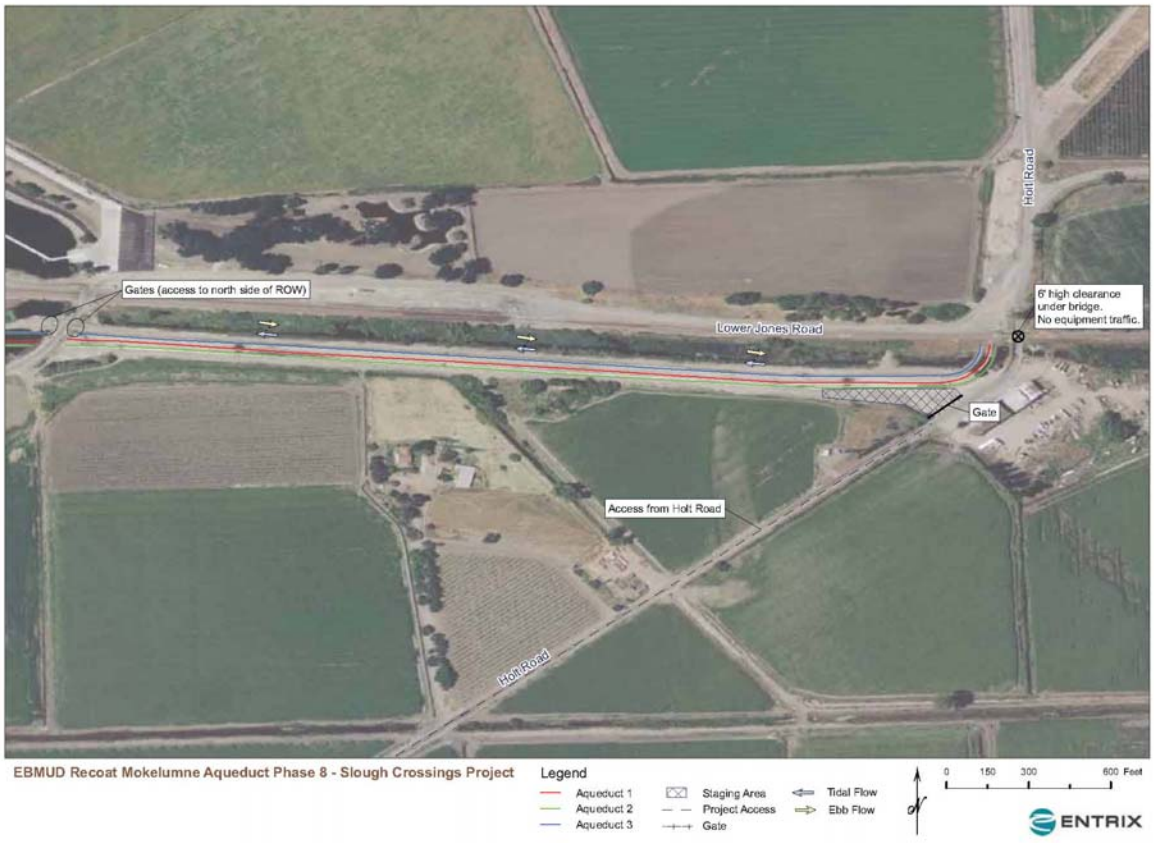
	Equipment and Vehicles		Rating	Planned	Activity Schedule		
Phase or Activity	**Type**	**Category**	**BHP**	**Quantity**	**Weeks**	**Days/Wk**	**Hrs/Day**
Worker Commuting	Pickup Truck	On-road LD	n/a	40	18	5	8
All	10'x20' Connex Box (steel)	Unpowered		3	18	5	8
	Portable Johnny House	Unpowered		2	18	5	8
	6 yard Trash Dumpster	Unpowered	n/a	1	18	5	8
	10x20 Portable Shower with hot water heater	Unpowered		1	18	5	8
	Office Trailers (40x10 & 20x10)	Unpowered		2	18	5	8
	Vacuum Loader	Unpowered		1	18	5	8
	Recycle Blast Trailer	Unpowered		1	18	5	8
	Fork Lift	Off-road	125	1	18	5	8
	40 foot Flat Bed Trailer (part of containment trailer)	Unpowered		1	18	5	8
	Pickup Truck	On-road LD	n/a	3	18	5	8
	20,000 CFM dust collector	Off-road	30	1	18	5	8
	2 Ton Air Dryer	Off-road	15	1	18	5	8
	375 CFM Air Compressor	Off-road	131	1	18	5	8
	1200 CFM Air Compressor	Off-road	420	1	18	5	8
	Dozer	Off-road	150	1	18	5	8
	Water Truck (2000 gallons)	On-road HHD	n/a	1	18	5	8
	40 foot Connex trailer	Unpowered		1	18	5	8
	Crane			1	18	5	8
Recycling Rig	1600 CFM Air Compressor	Off-road	560	1	18	5	8
	1200 CFM Air Compressor	Off-road	420	1	18	5	8
	185 CFM Air Compressor	Off-road	65	1	18	5	8
	8 shower stall trailer	Unpowered		1	18	5	8
	Vacuum truck	On-road MD	n/a	2	18	5	8
Haul trucks	For hazardous material	On-road HHD	n/a	18	18	5	2
Dewatering	Pumps	Off-road	80	1	18	5	4
	Water barriers	Unpowered		5	18	7	24

Holt Bend

Holt Bend is located at the intersection of West Lower Jones Road and Holt Road. At this site, the pipelines cross Trapper Slough for about 500 feet (Figure 2.10) and enter a culvert to cross the Burlington Northern Santa Fe (BNSF) Railroad as shown in Figure 2.11. North of the culvert railroad crossing, the pipelines transition underground and cross beneath Holt Road. Adjacent to this site is Holt Road, which also crosses under the railroad. East of Holt Road is a manufacturing facility.

Aqueduct No. 3 is encased in concrete from the railroad to approximately 200 feet along the right-of-way, and the encased portion will remain in place, (i.e., no recoating required). A fig tree overhanging Aqueduct No. 2 would be removed prior to recoating the pipelines (Figure 2.10).

Holt Bend
Figure 2.10



Aerial View of Holt Bend
Figure 2.11

The portion of the Aqueducts that crosses under the BNSF Railroad tracks is currently contained in two 10-foot wide concrete box culverts (also assumed to be 10 feet deep) that are 50 feet long (Figure 2.12). Currently about 50 cubic yards (CY)[1] and 70 CY of sediment (i.e., sand and gravel) has accumulated in the opening between the Aqueducts and the box culverts. The accumulated sediment would need to be removed to expose the pipes to allow recoating. As a result, there would be approximately 156 CY[2] of sediment removed for disposal, which would require 16 dump truck loads. If uncontaminated[3], the removed sediment would be disposed at a local landfill. If contaminated but not hazardous, the material would be disposed at Keller Canyon Landfill in Pittsburg. Any removed sediment classified as hazardous waste would be disposed at the Kettleman Hills Hazardous Waste Facility located 55 miles southwest of Fresno.

[1] The concrete box culvert widths were measured in the field with 10-foot wide opening. The culverts are partially filled with sediment, so the depth is also assumed to be 10 feet. The pipe diameters with a 2-inch wall thickness assumed were subtracted from the 10-foot by 10-foot box opening to estimate the annual space between pipes and culvert. The culvert is currently filled to about half its height, which is the estimate for sediment volumes. To permanently fill the annular space takes twice the sediment volume.
[2] This calculation assumes a 30 percent bulking factor.
[3] Soil is considered "uncontaminated" compared with background levels and on case-by-case basis.

The annular space between the pipes and culvert would be sealed (filled) with concrete to provide the necessary corrosion protection. The volume required to fill the annular space would be approximately 100 CY for the easterly culvert and 140 CY for the westerly culvert.

Holt Bend Culverts
Figure 2.12

The section of pipeline from Holt Bend to the crossing at Cook Road is approximately 2,500 feet long. Approximately 500 feet of the pipes are within the slough. This area would require dewatering to obtain the clearance needed below the pipe for the containment structure and recoating activities. Dewatering would be performed using rubber water-filled dams as described in the Dewatering Method section on page 2-18. Dewatering could potentially result in environmental impacts and may require additional mitigation measures to reduce impacts to less than significant levels. Any additional mitigation measures for potential impacts from dewatering would be developed with the appropriate public agencies during the permitting process.

The remaining 2,000 linear feet of pipeline does not cross the slough and is typically accessible without dewatering. Construction would progress at a rate of about 50 feet of pipe per day for recoating over the slough and about 90 feet of pipe per day over land. Total construction time would be approximately 14 weeks, including mobilization and demobilization.

See Table 2.3 for construction equipment and estimated construction duration.

TABLE 2.3

HOLT BEND
(500 feet in slough - 2,000 feet overland)

	Equipment and Vehicles		Rating	Planned	Activity Schedule		
Phase or Activity	**Type**	**Category**	**BHP**	**Quantity**	**Weeks**	**Days/Wk**	**Hrs/Day**
Worker Commuting	Pickup Truck	On-road LD	n/a	40	14	5	8
All	10'x20' Connex Box (steel)	unpowered		3	14	5	8
	Portable Johnny House	unpowered		2	14	5	8
	6 yard Trash Dumpster	unpowered	n/a	1	14	5	8
	10x20 Portable Shower with hot water heater	unpowered		1	14	5	8
	Office Trailers (40x10 & 20x10)	unpowered		2	14	5	8
	Vacuum Loader	unpowered		1	14	5	8
	Recycle Blast Trailer	unpowered		1	14	5	8
	Fork Lift	Off-road	125	1	14	5	8
	40 foot Flat Bed Trailer (part of containment trailer)	unpowered		1	14	5	8
	Pickup Truck	On-road LD	n/a	3	14	5	8
	20,000 CFM dust collector	Off-road	30	1	14	5	8
	2 Ton Air Dryer	Off-road	15	1	14	5	8
	375 CFM Air Compressor	Off-road	131	1	14	5	8
	1200 CFM Air Compressor	Off-road	420	1	14	5	8
	Dozer	Off-road	150	1	14	5	8
	Water Truck (2000 gallons)	On-road HHD	n/a	1	14	5	8
	40 foot Connex trailer	unpowered		1	14	5	8
	Excavator	Off-road	250	1	2	5	8
Recycling Rig	1600 CFM Air Compressor	Off-road	560	1	14	5	8
	1200 CFM Air Compressor	Off-road	420	1	14	5	8
	185 CFM Air Compressor	Off-road	65	1	14	5	8
	8 shower stall trailer	unpowered		1	14	5	8
	Vacuum truck	On-road MD	n/a	2	14	5	8
Haul trucks	For sediment material	On-road HHD	n/a	16	2	5	2
	For hazardous material	On-road HHD	n/a	9	14	5	2
Dewatering	Pumps	Off-road	80	1	8	5	4
	water barriers	unpowered	n/a	3	8	7	24

Black Slough Crossing

Black Slough (Figure 2.13) is located in San Joaquin County just east of Inland Drive (Figure 2.14). This site is on Lower Roberts Island (Reclamation District #684) north of Highway 4. Only Aqueduct Nos. 1 and 2 are exposed at this location, while Aqueduct No. 3 is subterranean. This crossing is 30 feet long and the two pipelines are exposed between two concrete abutments. Each

pipeline is coated with reinforced cement mortar; however, the mortar is aged and cracking. When the slough channel is active and the pipes are partially submerged, vegetation and debris accumulate against the pipelines.

Black Slough Crossing
Figure 2.13

Periodic sediment removal is conducted along Black Slough, presumably by the Reclamation District or local farms. The land use is strictly agricultural although Kinder Morgan Energy Partners operates a petroleum facility just south of the slough at the intersection of Inland Drive and Jacobs Road. This pipeline shares EBMUD's right-of-way. EBMUD's Inland Drive Cathodic Station is located on the west side of Inland Drive. The staging area would be located away from the site (Figure 2.14).

The exposed pipeline sections would require removal of the mortar coating, abrasive blasting, recoating, and a cement mortar overcoat.

This crossing would require removal of about 140 CY of sediment[4] to expose the bottom half of the pipes for recoating activities. The sediment would be disposed of at a local landfill if uncontaminated or Keller Canyon in Pittsburg if contaminated but not hazardous waste. If the sediment was classified as hazardous waste, it would be disposed at Kettleman Hills. As a result, there would be approximately 182 CY[5] of sediment to be hauled off-site for disposal, which would require 19 dump truck loads.

[4] The site is 24-feet wide and requires about 4 feet of sediment removal. Assumed are 10 feet on the upstream and downstream sides plus the length under the pipes for a total length of 40 feet, which calculates to 140 CY. There could be some slope to the bottom from the upstream and downstream ends to under the pipes, which would result in somewhat less sediment removal.
[5] This calculation assumes a 30 percent bulking factor.

Aerial View of Black Slough Crossing
Figure 2.14

At Black Slough, 12 inches of clearance has been observed between the slough bed and the bottom of the Aqueducts. Water levels range from a few inches up to 40 inches. This area would require dewatering to obtain the clearance needed below the pipeline for the containment structure and recoating activities. The Dewatering Method section describes the process for dewatering using rubber water-filled dams. If required, a piped bypass would be used to maintain flows.

Construction time would be about 4 weeks from start to completion. Table 2.4 presents a list of construction equipment and estimated construction duration.

TABLE 2.4
BLACK SLOUGH

	Equipment and Vehicles		Rating	Planned	Activity Schedule		
Phase or Activity	**Type**	**Category**	**BHP**	**Quantity**	**Weeks**	**Days/Wk**	**Hrs/Day**
Worker Commuting	Pickup Truck	On-road LD	n/a	40	4	5	8
All	10'x20' Connex Box (steel)	unpowered		3	4	5	8
	Portable Johnny House	unpowered		2	4	5	8
	6 yard Trash Dumpster	unpowered	n/a	1	4	5	8
	10x20 Portable Shower with hot water heater	unpowered		1	4	5	8
	Office Trailers (40x10 & 20x10)	unpowered		2	4	5	8
	Vacuum Loader	unpowered		1	4	5	8
	Recycle Blast Trailer	unpowered		1	4	5	8
	Fork Lift	Off-road	125	1	4	5	8
	Pickup Truck	On-road LD	n/a	3	4	5	8
	20,000 CFM dust collector	Off-road	30	1	4	5	8
	2 Ton Air Dryer	Off-road	15	1	4	5	8
	375 CFM Air Compressor	Off-road	131	1	4	5	8
	1200 CFM Air Compressor	Off-road	420	1	4	5	8
	Dozer	Off-road	150	1	4	5	8
	Water Truck (2000 gallons)	On-road HHD	n/a	1	4	5	8
	40' Connex trailer	unpowered		1	4	5	8
	Excavator	Off-road	250	1	4	5	8
Recycling Rig	1600 CFM Air Compressor	Off-road	560	1	4	5	8
	1200 CFM Air Compressor	Off-road	420	1	4	5	8
	185 CFM Air Compressor	Off-road	65	1	4	5	8
	8 shower stall trailer	unpowered		1	4	5	8
	Vacuum trucks	On-road MD	n/a	2	4	5	8
Haul trucks	For sediment material	On-road HHD	n/a	19	4	5	8
	For hazardous material	On-road HHD	n/a	1	2	5	2
Dewatering	Pumps	Off-road	80	1	4	5	4
	Water barriers	unpowered	n/a	2	4	7	24

Work Platform Systems

Construction activities would require selection of work platforms to support workers and equipment. Potential work platform systems include:

- Barges - Barge systems are commonly used on bridge recoating projects and in marine construction (Figure 2-6). They use segmented floating surfaces. Each segment is small enough to be transported to the jobsite by ordinary flatbed trucks and placed into position using a crane. The individual segments are then joined together to assemble a functional

work platform capable of supporting heavy construction equipment. The barge would be braced from lateral movement by the use of "spud anchors." This alternative could be used at Indian Slough and in the deeper waters of Trapper Slough, but is impractical in areas of limited water depth or space.

- Floating platforms - Floating systems are similar to barge systems, but consist of a smaller platform (Figure 2.9). These work platforms are capable of supporting small construction equipment and workers. The floating platforms also use spud anchors to prevent lateral movement. Floating systems would be applicable to either deep water or the shallow water environments of Trapper Slough.
- Cribbing or conventional scaffolding - This approach would be useful in areas where the water is extremely shallow or where no water exists, like Holt Bend, Black Slough, or the shallow water environments at Trapper Slough. It would be used to support the work above the soft soils. This method would overcome the water-depth limitations of the other approaches identified above, which would otherwise rest on the bottom of the sloughs and could become stuck in the soft muddy soils (Figure 2.15).

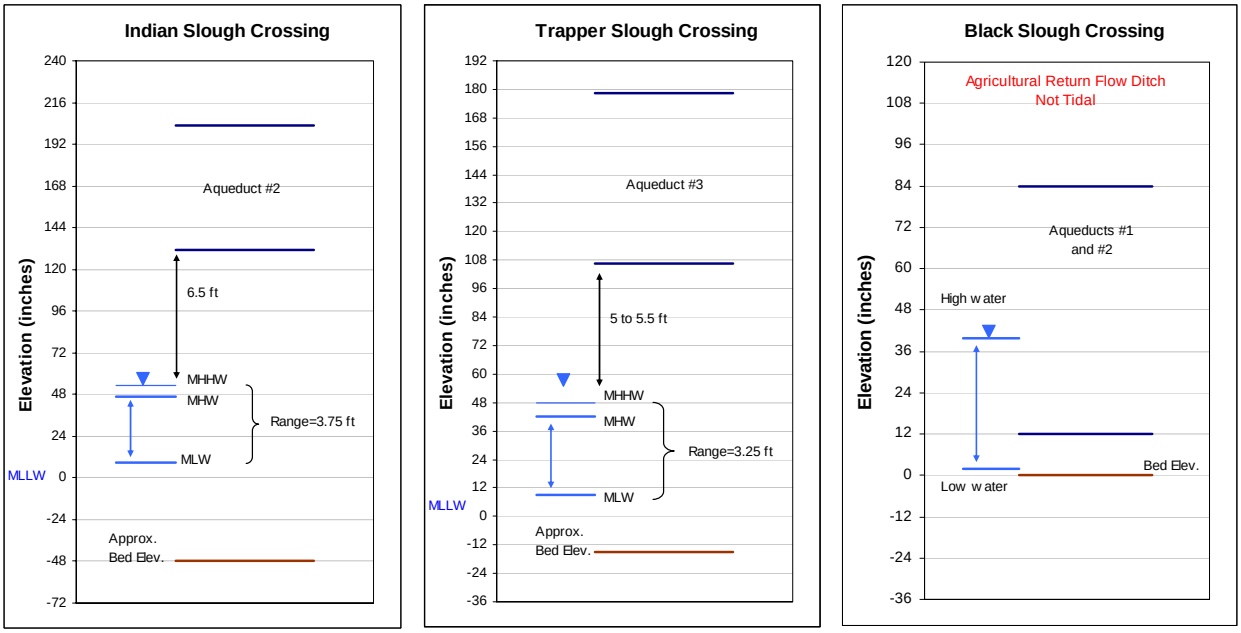
Typical Cribbing Support
Figure 2.15

- Work platforms supported by beams across the pile caps - This approach would use temporary beams or trusses spanning the distance between pile caps that support Aqueduct Nos. 2 and 3 (Aqueduct No. 1 has no pile caps). This approach is limited by the excess support capacity of the piles and allowable load capacity of the beams and platform, and would require engineering design.

Dewatering Method

Dewatering could occur at Black Slough, Holt Bend, and Trapper Slough depending on site conditions at the time of construction activities. Dewatering would be applied to obtain clearance below the pipelines for the containment structure and recoating activities or to gain access to the pipeline support bents.

The existing physical clearance between the pipelines and slough bed varies because of irrigation return flows and tidal influences. According to National Oceanic and Atmospheric Administration (NOAA) data (Free Tide Tables 2009), the tide fluctuates by about 3.25 feet; however, these tide predictions are determined at the confluence of Trapper Slough and Middle River and at the Whiskey Slough Marina just across the railroad tracks from the crossing location. Figure 2.16 illustrates the clearance between the Aqueducts, the ground (bottom) surface elevation, and the range in water surface elevations.



Clearance, Ground Surface Elevation, and Range of Water Elevations

Figure 2.16

On October 26, 2009, there was 12 inches of clearance between the pipeline and the slough bed at Black Slough. Water levels[6] range from a few inches up to 40 inches and are primarily controlled by irrigation return flows. On December 23, 2009, ENTRIX measured the high and low tide at Trapper Slough. On this day, the tide changed by 20 inches between high and low tide. Also, Spring tide for the month of December is 1.3 feet higher than high tide during the site visit. This indicates that Spring tide would be about 5.2 feet from the bottom of Aqueduct No. 3. High water marks on the pile caps were measured at 68 inches below the Aqueducts. Pile caps are about 56 inches below the pipe. At the Whiskey Slough Road crossing, the pipes dip down and have 6 inches less clearance. At Trapper Slough, there is about 10 feet of clearance between the bottom of the pipelines and the slough bed. The tide fluctuates from 5 to 5.5 feet below the pipes, and thus would allow adequate access during high tides. This also allows for about 12 to 18 inches of under-pipe decks and flooring. Holt Bend is located at the end of Trapper Slough and is assumed to have similar tidal fluctuation as Trapper Slough.

[6] Determined from water stains on the pipe coating and concrete headwalls.

The proposed method for dewatering is the use of temporary water barriers (Figure 2.17). Water barriers are rubber tubes that are filled with water to block the flow water. At Black Slough, water barriers could be positioned across the ditch, upstream of the pipelines. If necessary, a pump and pipe would be used to keep water flowing past the project area. At Holt Bend, the water barriers could also be used to isolate the tip of the slough that crosses Holt Bend. At Trapper Slough, a U-formation of barriers would be placed to extend the dry land into the slough as depicted in the bottom-right illustration in Figure 2.17. The exact configurations would be determined by the construction contractor based on field conditions at the time of work.

Example Projects Illustrating Installation of Water Barriers
Figure 2.17

Water barriers come in various lengths to suit job requirements. Temporary water barriers can reduce impacts to the environment by avoiding the need for placement and removal of fill. Based on previous experience in the Delta, agencies such as California Department of Fish and Game (CDFG), United States Fish and Wildlife Services (USFWS), and National Marine Fisheries Service (NMFS) would only approve dewatering from July to October.

Based on construction sequencing, dewatered sections would remain dry for typically six weeks, but not to exceed eight weeks. This time period includes setup of the water barriers, dewatering, drying time, and construction, followed by re-watering. The estimated eight-week period is based on having two weeks for dewatering and drying time, and one week for re-watering and moving the barriers to the next crossing ahead of construction. This leaves 3 to 5 weeks for recoating activities, including setup and cleanup.

Containment System

A sealed containment system would be used for all recoating activities. In general, the containment structure would be supported on the pile caps, scaffolding or cribbing. The containment structures would meet the requirements of the Society for Protective Coatings (SSPC) Guide 6 Class 1A, which ensure the highest level of emissions control. This guide requires impenetrable walls, ceilings and floorings, rigid or flexible framing, fully sealed joints, airlock or re-sealable entryways, negative air ventilation, and exhaust filtration.

Historically, the specific design of the containment structure has varied based on site conditions and contractor preference. One design used in the overland portions of the recoating project was a steel arched-truss framed containment with fabric flooring, roof, and walls. This system, shown in Figure 2.18, is equipped with wheels and is capable of accommodating pipes at varying elevations.

Example Containment Structure
Figure 2.18

EBMUD also requires certain additional wind limitations on the design of the containment structures, and the amount of additional loading that can be imparted on the Aqueducts by the structure. In addition, in order to satisfy EBMUD requirements, the containment structures would be designed by a registered engineer that is certified by SSPC as qualified to work on industrial lead abatement projects.

The containment system provides a high level of emissions control by using impenetrable walls, ceilings and flooring, rigid or flexible framing, fully sealed joints, airlock or re-sealable entryways, negative air ventilation and exhaust filtration. The containment structure would likely be a combination of engineered fabric walls and roof, with flooring connected and sealed to the work platform.

Ventilation and Electrical Power Systems

Equipment associated with the recoating activities include air ventilation and exhaust filtration, sand blasting hoppers, and power sources. Additional support equipment may be required to provide redundancy and ensure the uninterrupted operation of the ventilation and filtration equipment. This equipment may include spare ductwork, stockpiled impenetrable fabrics, a secondary vacuum unit, or backup compressor.

This equipment would likely be located on the adjacent dry-land peninsulas, the existing gravel access roads, levees, or on floating platforms. Adjacent staging areas for support equipment exist near each of the work sites for Indian Slough, Trapper Slough, Holt Bend, and Black Slough.

Project Schedule, Construction Hours and Crew

The project is expected to be completed within three years, commencing in 2011 and ending in 2013. Although the project duration is three years, the construction activities would occur only during the painting season from April to November. The period for performing recoating activities may further be reduced depending on mitigation measures and/or regulatory agency requirements. Typical construction hours for recoating projects are 6:00 a.m. to 7:00 p.m., Monday through Friday. Per EBMUD specifications, work in excess of eight hours per day, on Saturdays, on Sundays, or on EBMUD holidays requires prior consent of the Engineer and is subject to cost of overtime construction inspection.

The crew size is likely to vary and is dependent on site conditions and contractor design. For the purpose of analyzing environmental impacts, a conservative number of 40 crew members was used. This does not include part-time support personnel such as inspectors, biologists, delivery people and suppliers, industrial hygienist, etc., because their potential impacts are expected to be less than significant. The work is typically performed in one shift, although sometimes the contractor opts to group tasks into shifts (blast in the morning, paint in the afternoon, move the rig in the evening, etc.).

Coordination with Other Agencies

Compliance with numerous federal, state, and local regulations as well as procedures and standards set by environmental permits would be required for this project. EBMUD and its contractors would be required to comply with all applicable requirements. Table 2.5 lists the major federal, state, and local permits, approvals, and consultations identified for project construction and operation. EBMUD's contractor would also notify the Reclamation Districts and the BNSF Railroad of the project schedule. However, no official permits or approvals are required from these entities.

A construction stormwater permit with the State Water Regional Control Board would not be required because the project consists of maintenance activities to an existing facility and the project sites are geographically distinct with each site disturbing less than one acre of unpaved land.

TABLE 2.5
POTENTIAL PERMITS AND APPROVALS FOR THE PROPOSED PROJECT AND ALTERNATIVES

Agency or Department	Permit or Approval	Action Associated with the Permit or Approval
Contra Costa County	County Drainage Permit	Compliance with County 1010 Drainage Ordinance for activities involving watercourses and drainage facilities in unincorporated areas
	Flood Control & Water Conservation District Easement or Encroachment Permit	Land rights and a permit required where the pipeline crosses EBMUD's property near Indian Slough
San Joaquin County	No permits required	
Regional Water Quality Control Board (RWQCB)	National Pollutant Discharge Elimination System Construction Activity Permit	Control of stormwater pollution during construction, apply Best Management Practices
	401 Certification	Water Quality Certification in conjunction with 404 Permit
California Department of Fish and Game (CDFG)	Section 1602 Streambed Alteration Agreement and Incidental Take Permit under the California Endangered Species Act.	Potential impacts to creeks and special-status plant and animal species.
United States Army Corp of Engineers (USACE)	404 Nationwide Permit(s)	Impacts to wetlands and waters of the U.S. less than 0.5 acre (for dewatering component of the project)
	Section 10 of Rivers and Harbors Act Navigable Waterways Permit	Placement of fill in navigable waterway
United States Coast Guard	Permit to Anchor	For barge placed in a navigable waterway
United States Fish and Wildlife Service (USFWS)	Section 7 consultation under the federal Endangered Species Act	USFWS to evaluate potential impacts to special-status plant and animal species; required as a part of USACE permitting
National Marine Fisheries Service (NMFS)	Section 7 consultation under the federal Endangered Species Act required as a result of USACE permitting	NMFS to evaluate potential impacts to fish species
State Historic Preservation Officer (SHPO)	Section 106 Review	Consultation necessary as part of the USACE permit process

CHAPTER 3
ENVIRONMENTAL CHECKLIST FORM

1 **Project Title:** Recoat Mokelumne Aqueducts Phase 8 - Slough Crossings Project

2 **Lead Agency Name and Address:** East Bay Municipal Utility District
P.O. Box 24055
Oakland, CA 94623

3 **Contact Person:** Bill E. Maggiore, Senior Engineer

4 **Project Location:** Indian Slough (Contra Costa County)
Trapper Slough, Holt Bend, and Black Sloughs (San Joaquin County)

5 **Project Sponsor's Name and Address:** East Bay Municipal Utility District (M/S 701)
P.O. Box 24055
Oakland, CA 94623

6 **General Plan Designation:**

The Mokelumne Aqueducts right-of-way is designated Public/Semi Public in the Contra Costa General Plan, and General Agricultural in the San Joaquin County General Plan.

7 **Zoning:**

The Mokelumne Aqueducts right-of-way is zoned A-3 (Heavy Agricultural) and A-2 (General Agricultural) in the Contra Costa County General Plan, and AG-40 (Agricultural with minimum 40-acre parcel size) and AG-80 (Agricultural with minimum 80-acre parcel size) in the San Joaquin County General Plan.

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.):**

A description of the project is presented in Chapter 1 Project Description on page 1-1

9 **Surrounding land uses and setting (briefly describe project's surroundings):**

Land uses adjacent to the Mokelumne Aqueducts are dominated by agricultural uses, with minimal residential, commercial and recreational uses in the vicinity.

10 **Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):**

- Reclamation District No. 684 – Lower Roberts Island
- Reclamation District No. 2116 – San Joaquin County, Holt Station
- Reclamation District No. 2039 – Upper Jones Tract
- Reclamation District No. 2024 – Contra Costa County, Orwood Tract
- United States Army Corps of Engineers – nationwide permit
- United States Fish and Wildlife Service – USACE consultation
- National Marine Fisheries Service – USACE consultation
- California Department of Fish and Game – streambed alteration agreement
- Contra Costa County Flood Control and Water Conservation District – drainage permit
- Regional Water Quality Control Board, Central Valley Region 5 – 401 water quality certification
- United States Coast Guard – permit to anchor

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below could potentially be affected by this project, but would be mitigated to a less than significant level as indicated by the checklist on the following pages.

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

DETERMINATION

On the basis of this initial evaluation:

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

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION has been prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment because all potentially significant effects (a) have been analyzed adequately in an earlier Environmental Impact Report pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier Environmental Impact Report, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Xavier J. Irias
Director of Engineering and Construction

4-23-10
Date

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. "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 Environmental Impact Report 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 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 Section XVII, "Earlier Analyses," may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program Environmental Impact Report, or other California Environmental Quality Act (CEQA) process, an effect has been adequately analyzed in an earlier Environmental Impact Report or Negative Declaration. Section 15063 (c) (3) (D). Earlier analyses are discussed in the Earlier Analysis Section at the end of the environmental checklist forms.
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 ones.
9. The analysis of each issue should identify:

    a) The significance criteria or threshold used to evaluate each question; and
    b) The mitigation measure identified, if any, to reduce the impact to less than significance.

ENVIRONMENTAL IMPACT CHECKLIST

I. AESTHETICS / VISUAL QUALITY **Would the Project:**	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Have substantially adverse effect on a scenic vista?				X
b) Damage scenic resources, including but not limited to, trees, rock outcropping, and historic buildings within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of the Site and its surroundings?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

DISCUSSION

Ia. No Impact. The San Joaquin County General Plan designates the 13-mile length of Bacon Island Road from State Route (SR) 4 to its northern terminus on Bacon Island as a Scenic Route. A 9-mile length of the SR 4 from Bacon Island Road west to the San Joaquin/Contra Costa County line is also a county-designated Scenic Route. However, construction of the proposed project would occur within boundaries of the existing Mokelumne Aqueduct right-of-way and adjacent agricultural areas and would not be visible from SR 4.

Ib. No Impact. The proposed project would occur within boundaries of the existing Mokelumne Aqueducts right-of-way and would not be located within a state scenic highway.

Ic. Less than Significant Impact. The proposed project would replace the existing paint on the surface of the existing Mokelumne Aqueducts. The new paint would serve to improve the visual character of the site and its surroundings. Therefore, the project would have a less than significant impact on the existing visual character or quality of the site and its surroundings.

Id. Less than Significant Impact. No permanent light sources would be created by the proposed project. Although the new paint could reflect some light from existing sources in the area, no significant glare would be produced that would adversely affect daytime views in the area.

II. AGRICULTURE AND FOREST RESOURCES **In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the Project:**	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use? (The Farmland Mapping and Monitoring Program in the California Resources Agency, Dept. of Conservation, maintains detailed maps of these and other categories of farmland.)				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220[g]) or timberland (as defined in Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104[g])?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could individually or cumulatively result in loss of Farmland, to non-agricultural use?				X

DISCUSSION

IIa. No Impact. The General Plan designation of the Mokelumne Aqueducts right-of-way within San Joaquin County is General Agriculture, with zoning of AF-40 (Agricultural with minimum 40-acre parcel size) and AG-80 (Agricultural with minimum 80-acre parcel size - San Joaquin County 1992). In Contra Costa County, the General Plan designation is Public/Semi-Public, with zoning of A-3 (Heavy Agricultural) and A-2 (General Agricultural - Contra Costa County 2005). The proposed project would repaint existing pipelines. As such, no change in land use within the right-of-way or surrounding areas would occur and the project would not convert farmland to a nonagricultural use.

IIb. No Impact. The proposed project would not conflict with existing agricultural zoning designations. In addition, while there are parcels under Williamson Act contracts around each of the project sites (Contra Costa County 2007 and Department of Conservation 2007), the project would not convert land uses around the sites. As such, the project would not conflict with existing zoning or Williamson Act contracts.

IIc. No Impact. As stated above, the project would not result in any land use changes within the right-of-way or areas surrounding the project sites. As such, the proposed project would not conflict with existing zoning for, or cause rezoning of, forest land.

IId. No Impact. The proposed project would not result in the loss of forest land or conversion of forest land to non-forest use.

IIe. No Impact. The proposed project would repaint existing steel pipelines and would not affect the use of adjacent properties.

III. AIR QUALITY **Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:**	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Conflict with or obstruct implementation of the applicable Air Quality Attainment Plan or Congestion Management Plan?			X	
b) Violate any stationary source air quality standard or contribute to an existing or projected air quality violation?		X		
c) Result in a net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?		X		
d) Expose sensitive receptors to substantial pollutant concentrations?		X		
e) Create objectionable odors affecting a substantial number of people?			X	

DISCUSSION

IIIa. Less than Significant Impact. The Indian Slough site is located in Contra Costa County, which is in the San Francisco Bay Area Air Basin. Black Slough, Holt Bend, and Trapper Slough sites are located in San Joaquin County, which is in the San Joaquin Valley Air Basin. These air basins are under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD) and the San Joaquin Valley Air Pollution Control District (SJVAPCD), respectively.

The BAAQMD and SJVAPCD are the regional agencies responsible for air quality regulation within the San Francisco Bay Area and San Joaquin Valley Air Basins, respectively. BAAQMD and SJVAPCD regulate air quality through their planning and review activities. BAAQMD and SJVAPCD have permit authority over most types of stationary emission sources and can require stationary sources to obtain permits; they can also impose emission limits, set fuel or material specifications, or establish operational limits to reduce air emissions. BAAQMD and SJVAPCD regulate new or expanding stationary sources of toxic air contaminants. For state air quality planning purposes, the Bay Area and San Joaquin Valley are classified by the California Clean Air Act as a nonattainment area for ozone. The respective "Serious" and "Extreme" classifications trigger various plan submittal requirements and transportation performance standards. One such requirement is that each BAAQMD and SJVAPCD update its air quality attainment plan every 3 years (triennially) to reflect progress in meeting the air quality standards and to incorporate new information regarding the feasibility of control measures and new emission inventory data.

The project would not conflict with or obstruct any air quality plans of the BAAQMD or SJVAPCD, specifically, the BAAQMD Clean Air Plan and Ozone Attainment Plan (BAAQMD 2000, 2001) and the SJVAPCD Extreme Ozone Attainment Demonstration Plan (SJVAPCD 2005). Because general construction emissions (i.e., temporary sources) are accounted for in the emission inventories included in the plans, impacts on air quality plan objectives are less than significant.

General estimated basin-wide construction-related emissions are included in the BAAQMD and SJVAPCD emission inventories, which in part, form the basis for the air quality plans cited above, and are not expected to prevent attainment or maintenance of the ozone, particulate matter, and carbon monoxide standards within the Bay Area or San Joaquin Valley. Therefore, construction impacts related to air quality plans for these pollutants would be less than significant, and no mitigation measures would be required, since emissions of these pollutants are presently estimated and accounted for in the BAAQMD and the SJVAPCD emission inventories.

IIIb. Less than Significant with Mitigation Incorporated. The Clean Air Act of 1970 (amended 1977 and 1990, 42 United States Code [USC] 7401 et seq.) established National Ambient Air Quality Standards (NAAQS), and individual states retained the option to adopt more stringent standards and to include other pollution sources. California had already established its own air quality standards when federal standards were established, and because of the unique meteorological conditions in the state, considerable differences exist between the federal and the state standards currently in effect in California, as shown in Table 1. California Ambient Air Quality Standards (CAAQS) are at least as protective as national standards and are often more stringent.

The ambient air quality standards shown in Table 1 are intended to protect public health and welfare and specify the concentration of pollutants (with an adequate margin of safety) to which the public may be exposed without adverse health effects. The standards are designed to protect those segments of the public most susceptible to respiratory distress (known as sensitive receptors), including asthmatics, the very young, the elderly, people weak from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels somewhat above the ambient air quality standards before adverse health effects are observed.

Air districts in California are required to monitor air pollutant levels to assure that NAAQS and CAAQS are met and, in the event that they are not, to develop strategies to meet these standards. If the standards are met, the local air basin is classified as being in "attainment"; if the standards are exceeded, it is classified as "nonattainment." Where insufficient data exist to make a determination, an area is deemed "unclassified".

TABLE 1
AMBIENT AIR QUALITY STANDARDS

		California Standards		Federal Standards	
Pollutant* + **	**Averaging Time**	**ppmv**	**µg/m^3**	**ppmv**	**µg/m^3**
Ozone (O_3)	1-hour	0.09	177	--	--
	8-hour	0.07	137	0.075	147
Nitrogen Dioxide (NO_2)	1-hour	0.18	338	--	--
	Annual	0.03	56	0.053	100
Sulfur Dioxide (SO_2)	1-hour	0.25	655	--	--
	3-hour (secondary)	--	--	0.50	1,309
	24-hour	0.04	105	0.14	367
	Annual	--	--	0.03	79
Carbon Monoxide (CO)	1-hour	20	22,898	35	40,071
	8-hour	9	10,304	9	10,304
	Lake Tahoe (8-hour)	6	6,869	--	--
Resp. Particulates (as PM_{10})	24-hour	--	50	--	150
	Annual	--	20	--	--
Fine Particulates (as $PM_{2.5}$)	24-hour	--	--	--	35
	Annual	--	12	--	15
Lead (Pb)	30-day	--	1.5	--	--
	3-month (rolling)*	--	--	--	0.15
Sulfates (as SO_4)	24-hour	--	25	--	--
Hydrogen Sulfide (H_2S)	1-hour	0.03	42	--	--
Vinyl Chloride (C_2H_3Cl)	24-hour	0.01	26	--	--
Visibility Reducing Particles	8-hour	Extinction coefficient of 0.23 per km; visibility of 10 miles or more (0.07 to 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70%.		--	--

Source: CARB 2009a, USEPA 2009a
*Notes: *The 1.5 µg/m^3 federal quarterly lead standard applied until 2008; 0.15 µg/m^3 rolling 3-month average thereafter*
***For gases, µg/m^3 calculated from ppmv based on molecular weight and standard conditions (Standard Temperature 25 deg C Standard Molar Volume 24.465 liter/g-mole)*

In general, the San Francisco Bay Area and San Joaquin Valley experience low concentrations of most pollutants when compared to state and federal standards, except for ozone and particulate matter, for which standards are exceeded periodically. The attainment status of the region is shown in Table 2.

TABLE 2
ATTAINMENT STATUS SUMMARY – BAY AREA AND SAN JOAQUIN VALLEY REGION

Criteria Pollutant	Federal Designation	State Designation
Ozone (O_3) (1-hour)	Not Applicable	Nonattainment
Ozone (O_3) (8-hour)	Nonattainment*	Nonattainment
Nitrogen Dioxide (NO_2)	Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment/Unclassified***	Attainment
Carbon Monoxide (CO)	Attainment	Attainment
Resp. Particulates (as PM_{10})	Unclassified/Attainment***	Nonattainment
Fine Particulates (as $PM_{2.5}$)	Unclassified/Nonattainment***	Nonattainment
Lead (Pb)	Attainment	Attainment
Sulfates (as SO_4)	(no federal standard)	Attainment
Hydrogen Sulfide (H2S)	(no federal standard)	Unclassified**
Vinyl Chloride (C_2H_3Cl)	(no federal standard)	No Data/Information Available
Visibility	(no federal standard)	Unclassified**

Source: CARB 2009b

Notes: * *The 0.08 ppmv federal 8-hour ozone standard applied until 2008; 0.075 ppmv thereafter*
** *At the time of designation, if the available data does not support a designation of attainment or nonattainment, the area is designated as unclassified.*
*** *Bay Area/San Joaquin Valley*

As shown in Tables 3 and 4, project construction would have a limited potential to contribute to existing violations of state and federal air quality standards for ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$), primarily through diesel engine exhaust and fugitive dust emissions. No applicable quantitative emission thresholds, neither daily nor annual, would be exceeded in either BAAQMD or SJVAPCD.

TABLE 3
ESTIMATED MAXIMUM CONSTRUCTION EMISSIONS – PROJECT (MITIGATED)

	Peak	Total	Thresholds		Significant (Yes/No)	
Criteria Emissions	lbs/day	tons	lbs/day	tons	lbs/day	tons
Volatile Organic Compounds (VOC as CH_4)	6.8	0.73	54	10	No	No
Carbon Monoxide (CO)	31.5	3.57	Violation of CAAQS for CO		No	No
Oxides of Nitrogen (NO_X as NO_2)	51.6	4.89	54	10	No	No
Sulfur Dioxide (SO_X as SO_2)	0.1	0.01	n/a	40	n/a	No
Combustion Particulates (C-PM_{10})	2.4	0.23	82	15	No	No
Combustion Particulates (C-$PM_{2.5}$)	2.1	0.21	54	10	No	No
Fugitive Dust (F-PM_{10})	95.3	5.62	n/a	15	n/a	No
Fugitive Dust (F-$PM_{2.5}$)	11.0	0.57	n/a	10	n/a	No

Sources: SCAQMD 2008, BAAQMD 2009c, USEPA 2006

Notes: Fugitive dust and combustion particulates are determined exclusively

The use of newer, lower emission Tier 1, 2, and 3 engines in most of the construction equipment used onsite is a mitigating factor for combustion emissions of Nitrogen Oxide (NOx), reactive organic compounds (ROC), carbon monoxide (CO), PM_{10}, and $PM_{2.5}$. California ultra-low sulfur

diesel fuel with a maximum sulfur content of 15 parts per million (ppm) by weight would be used in all diesel-powered equipment to minimize sulfur dioxide and particulate emissions.

However, because tiered emission standards and California ultra-low sulfur diesel fuel are the current baseline for the state, their use does not constitute mitigation under CEQA. Engine emissions would contribute to an existing air quality violation; therefore, these impacts would be significant and would require the following mitigation measures, which are based on BAAQMD and SJVAPCD emission control measures.

TABLE 4
ESTIMATED FUGITIVE DUST EMISSIONS SUMMARY – PROJECT (MITIGATED)

	Peak	Total	Thresholds		Significant (Yes/No)	
Fugitive Dust Emissions	**lbs/day**	**tons**	**lbs/day**	**tons**	**lbs/day**	**tons**
Fugitive Dust ($F\text{-}PM_{10}$) - All Onsites	22.5	2.32	n/a	15	n/a	No
Fugitive Dust ($F\text{-}PM_{10}$) - All Offsites	72.8	3.30	n/a	15	n/a	No
Fugitive Dust ($F\text{-}PM_{10}$) - All Combined Totals	95.3	5.62	n/a	15	n/a	No
Fugitive Dust ($F\text{-}PM_{2.5}$) - All Onsites	2.4	0.24	n/a	10	n/a	No
Fugitive Dust ($F\text{-}PM_{2.5}$) - All Offsites	8.5	0.33	n/a	10	n/a	No
Fugitive Dust ($F\text{-}PM_{2.5}$) - All Combined Totals	11.0	0.57	n/a	10	n/a	No

Sources: BAAQMD 2009c, USEPA 2006

Notes: Fugitive dust and combustion particulates are determined exclusively

Mitigation Measure AIR-1: Diesel Control Measures. EBMUD will incorporate the following measures into the construction contract specifications:

- To minimize potential diesel odor impacts on nearby receptors (pursuant to BAAQMD Regulation 1, Rule 301, and SJVAPCD Regulation IV, Rule 4102, Nuisance), construction equipment will be properly tuned. A schedule of tune-ups will be developed and performed for all equipment operating within the project area. A log of required tune-ups will be maintained and a copy of the log will be submitted to the project Environmental Compliance Officer (ECO) for review every 2,000 service hours.
- Fixed temporary sources of air emissions (such as portable pumps, compressors, etc.) will be electrically powered unless the contractor submits documentation and receives approval from the ECO that the use of such equipment is not practical, feasible, or available (generally contingent upon power line proximity, capacity, and accessibility). California ultra-low sulfur diesel fuel with maximum sulfur content of 15 ppm by weight, or an approved alternative fuel, will be used for onsite fixed equipment not using line power.
- To minimize diesel emission impacts, construction contracts will require off-road compression ignition equipment operators to reduce unnecessary idling with a 2 minute time limit.
- On-road and off-road material hauling vehicles will shut off engines while queuing for loading and unloading for time periods longer than 2 minutes.
- Off-road diesel equipment will be fitted with verified diesel emission control systems (e.g., diesel oxidation catalysts) to the extent reasonably and economically feasible.

- Utilize alternative fuel equipment (i.e., compressed or liquefied natural gas, biodiesel, electric) to the extent reasonably and economically feasible.

Mitigation Measure AIR-2: Greenhouse Gas Control Measures. During construction, contractors will implement the following measures to reduce greenhouse gas (GHG) emissions from fuel combustion and construction activities:

- On-road and off-road vehicle tire pressures will be maintained to manufacturer specifications. Tires will be checked and reinflated at regular intervals.
- Lower-carbon fuels such as biodiesel blends will be used where feasible.
- Engine retrofits to remove emissions, such as diesel particulate matter filters with diesel oxidation catalysts, will be used where feasible.
- Construction equipment engines will be maintained to manufacturer's specifications.
- Locally made construction materials will be used to the extent feasible.
- Construction debris will be reused to the extent feasible.
- Any exiting onsite trees and vegetation will be preserved or replaced at a 1:1 ratio in a nearby benign location (if removal is necessary for project activities) as a means of providing carbon sequestration.

Construction emissions of fugitive PM_{10} can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors. Despite this variability in emissions, experience has shown that there are a number of feasible control measures that can be reasonably implemented to significantly reduce fugitive PM_{10} emissions from construction. EBMUD's approach to the CEQA analyses of construction impacts is to emphasize implementation of effective and comprehensive control measures rather than detailed quantification of emissions.

To control emissions of particulate matter, the project would implement the following fugitive dust and particulate matter emissions control measures suggested by the BAAQMD, CEQA and SJVAPCD Assessment Guidelines as applicable (BAAQMD 1999, SJVAPCD 2002). Consistent with requirements of SJVAPCD Regulation VIII and BAAQMD Regulation 12, EBMUD would prepare and submit for BAAQMD approval, a Dust Control Plan that would contain specific procedures and practices necessary to suppress the generation of fugitive dust during construction activities.

Mitigation Measure AIR-3: Basic Dust Control Measures. EBMUD will require its contractor to implement the following controls at the construction and staging sites as applicable.

- Water all active construction areas twice daily or as necessary and indicated by soil and air conditions.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard.
- Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, will be effectively stabilized to minimize dust emissions

using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.

- All on-site unpaved roads and off-site unpaved access roads, parking areas, and staging areas will be effectively stabilized for dust emissions using water, aggregate, or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, sediment removing, land leveling, grading, cut and fill, and demolition activities will be effectively controlled for fugitive dust emissions utilizing application of water or by presoaking.
- When materials are transported off-site, all material will be covered, or effectively wetted to limit visible dust emissions, and at least two feet of freeboard space from the top of the container will be maintained.
- All operations will limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by wetting. Use of blower devices is expressly forbidden.
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles will be effectively stabilized for fugitive dust emissions utilizing sufficient water, chemical stabilizer/suppressant, or a cover.
- Within urban areas, trackout will be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
- Any site with 150 or more vehicle trips per day will prevent carryout and trackout.
- On-site, a speed limit of 15 miles per hour will be imposed on truck traffic.

Mitigation Measure AIR-4: Diesel Particulate Matter Emissions Control Measures. EBMUD will require the construction contractor to implement the following measures to reduce particulate matter emissions from diesel exhaust:

- Grid power will be used instead of diesel generators where feasible to connect to grid power (generally contingent upon power line proximity, capacity, and accessibility).
- The project specifications will include 13 California Code of Regulations (CCR) Sections 2480 and 2485, which limit idling of all diesel-fueled commercial vehicles (weighing over 10,000 pounds, both California- or non-California-based trucks) to 30 seconds at a school or 5 minutes at any location. In addition, the use of diesel auxiliary power systems and main engines will be limited to 5 minutes when within 100 feet of homes or schools while the driver is resting.
- The project specifications will include 17 CCR Section 93115, Airborne Toxic Control Measure for Stationary Compression Ignition Engines, which specifies fuel and fuel additive requirements and emission standards for operation of any stationary, diesel-fueled, compression-ignition engines.
- A schedule of low-emissions tune-ups will be developed and such tune-ups will be performed on all equipment, particularly for haul and delivery trucks.
- Low-sulfur (≤ 15 ppmw S) fuels will be used in all stationary and mobile equipment.

The project would implement the required BAAQMD and SJVAPCD emission control measures, i.e., diesel engine and fugitive dust controls (per BAAQMD CEQA and SJVAPCD Air Quality Impact Analysis guidelines) and compliant epoxy-based coatings

(per BAAQMD Regulation 8, Rule 3 and SJVAPCD Regulation IV, Rule 4601: Architectural Coatings). The agencies have determined that these measures reduce impacts from contributions to existing air quality violations to less than significant levels (BAAQMD 2009c, SJVAPCD 2002). Therefore, implementation of Mitigation Measures AIR-1 through AIR-4 would reduce this impact to less than significant.

IIIc. Less than Significant with Mitigation Incorporated. A criteria pollutant or regulated air pollutant is any air pollutant for which ambient air quality standards have been set by the United States Environmental Protection Agency (USEPA) or the California Air Resources Board (CARB). Primary air quality standards are established to protect human (public) health. Secondary air quality standards are designed to protect public welfare from effects such as diminished production and quality of agricultural crops, reduced visibility, degraded soils, materials and infrastructure damage, and damaged vegetation. Criteria pollutants include ozone (O_3), nitrogen dioxide (NO_2), CO, sulfur dioxide (SO_2), PM_{10}, and $PM_{2.5}$. The six most prevalent criteria pollutants and their potential health effects are described below, along with the most common GHGs (carbon dioxide [CO_2], methane [CH_4], and nitrous oxide [N_2O]).

The project would result in a small temporary incremental contribution to a cumulative effect for several criteria pollutants for which the San Francisco Bay Area and San Joaquin Valley Air Basins are in nonattainment under an applicable federal or state ambient air quality standard (i.e., O_3, PM_{10}, and $PM_{2.5}$). As shown in Table 3, none of the significance thresholds for either jurisdiction would be exceeded by the project, either daily or annually, as applicable. Since the project's emissions would be mitigated (Mitigation Measures AIR-1 through AIR-4) and would be short-term in nature, they would not be cumulatively considerable and thus less than significant.

Localized impacts would be less than significant because the project would implement applicable fugitive dust controls listed under Mitigation Measure AIR-3. The use of newer, lower emission Tier 1, 2, and 3 engines in most construction equipment used onsite is a measure for reducing combustion emissions of NO_X, ROCs, CO, PM_{10}, and $PM_{2.5}$. Although not a CEQA mitigation measure, California ultra-low sulfur diesel fuel with a maximum sulfur content of 15 ppm by weight would be used in all diesel-powered equipment, which would minimize sulfur dioxide and particulate emissions. Therefore, the impact would be less than significant with implementation of Mitigation Measures AIR-1 through AIR-4.

IIId. Less than Significant with Mitigation Incorporated. Certain population groups are considered by CARB to be more sensitive to air pollution and odors than others; in particular, children, elderly, and acutely ill and chronically ill persons, especially those with cardiorespiratory diseases such as asthma and bronchitis. Sensitive receptors (land uses) indicate locations where such individuals are typically found, namely schools, daycare centers, hospitals, convalescent homes, residences of sensitive persons, and parks with active recreational uses, such as youth sports.

Persons engaged in strenuous work or physical exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions than commercial and industrial areas because people generally spend longer periods at their residences, resulting in greater exposure to ambient air quality conditions. Recreational uses, such as parks, are also considered sensitive due to the greater exposure to ambient air quality conditions and because the presence of pollutants detracts from the recreational experience.

Diesel particulate matter (DPM) contains suspected carcinogens along with pulmonary irritants and hazardous compounds that may affect sensitive receptors such as young children, senior citizens, or those susceptible to respiratory disease. Where construction activity occurs in proximity to long-term sensitive receptors, including residential receptors, unhealthful exposure to diesel exhaust could result.

The original coating system used on Aqueduct Nos. 2 and 3 used a red lead (Pb) primer and multiple topcoats of leafing and nonleafing aluminum paint. These coatings would be removed using abrasive blasting. Abrasive blasting dust would be 98 percent captured and controlled by the containment system (i.e., negative-pressure containment shelter, vacuum reclaimer, high-volume dust collector) (EBMUD 2009a). Since the primer is only one layer of paint and only 2 percent of abrasive blasting dust would escape the system to become fugitive dust, no quantifiable amount of lead from removal of old coatings would be emitted into the environment.

The project sites are located in a sparsely populated rural (agricultural) area. The nearest house relative to a project site (Indian Slough) is approximately 200 feet south. The nearest schools are 3,200 feet southwest of Indian Slough and 1.14 miles northwest of Black Slough. There are no libraries, parks, senior facilities, day care centers, or hospitals within 2 miles of any of the sites.

Due to the relatively small scale of the proposed construction activity, its short-term temporary nature and the location in a sparely populated rural area; the containment system would lower the release of particles such that the exposure of sensitive receptors to substantial pollutant concentrations would be less than significant. BAAQMD and SJVAPCD control measures for diesel exhaust would be implemented as described in Mitigation Measures AIR-1 through AIR-4 in combination with the blasting controls described above. The project would not expose sensitive receptors to substantial pollutant concentrations. The impact would be less than significant with implementation of Mitigation Measures AIR-1 through AIR-4.

IIIe. Less than Significant Impact. The BAAQMD, CEQA and SJVAPCD Assessment Guidelines require an assessment of the potential for a project to cause a public nuisance by subjecting surrounding land uses (receptors) to objectionable odors.

BAAQMD Regulation 1, Rule 301, and similarly, SJVAPCD Regulation IV, Rule 4102, state that "No person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property."

An objectionable odor problem is defined by BAAQMD Regulation 7, Rule 102, as when the Air Pollution Control Officer "receives odor complaints from ten or more complainants within a 90-day period, alleging that a person has caused odors perceived at or beyond the property line of such person and deemed to be objectionable by the complainants in the normal course of their work, travel, or residence." The assessment protocol includes projects that have the potential to cause odors or projects that may subject potential sensitive receptors to nearby existing or proposed land uses that emit objectionable odors.

California ultra-low sulfur diesel fuel with a maximum sulfur content of 15 ppm by weight would be used in all diesel-powered equipment which minimizes emissions of sulfurous gases (sulfur dioxide, hydrogen sulfide, carbon disulfide, and carbonyl sulfide). Therefore, no objectionable odors are anticipated from construction activities or normal pipeline

maintenance. The project would not create objectionable odors affecting a substantial number of people; therefore, there would be a less than significant impact.

IV. BIOLOGICAL RESOURCES **Would the project:**	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Have a substantial adverse impact, 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 Dept. of Fish & Game or U.S. Fish & Wildlife Service?		X		
b) Have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Dept. of Fish & Game or U.S. Fish & Wildlife Service?		X		
c) Adversely impact federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) either individually or in combination with the known or probable impacts of other activities through direct removal, filling, hydrological interruption, or other means?		X		
d) Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?				X

DISCUSSION

IVa. Less than Significant with Mitigation Incorporated. The proposed project has the potential to affect several special-status species including the Swainson's hawk, a state-listed threatened species; burrowing owl, a Category 2 candidate for federal listings as threatened or endangered and California Species of Special Concern (CSC); valley elderberry longhorn beetle, a federally-listed threatened species; western pond turtle, a Category 2 candidate for federal listing; and other species listed in Table 5. The following discussion addresses potential adverse impacts on candidate, sensitive and other special-status species identified in local or

regional plans, policies or regulations of the California Department of Fish and Game (CDFG) or the United States Fish and Wildlife Service (USFWS).

TABLE 5

Special-Status Species That May Occur In The Proposed Project Area

Species	USFWS	CDFG	CNPS	Habitat	Potential Occurrence
INVERTEBRATES					
Conservancy fairy shrimp *Branchinecta conservatio*	FE	—	—	Vernal pools	Unlikely to be present in project area; no suitable habitat onsite.
Longhorn fairy shrimp *Branchinecta longia Ntenna*	FE	—	—	Vernal pools	Unlikely to be present in project area; no suitable habitat onsite.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT	—		Vernal pools	Unlikely to be present in project area; no suitable habitat onsite.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT	—	—	Valley Grassland, Foothill Woodland, Chaparral, Freshwater Wetlands, wetland-riparian	May be present within the project boundaries.
Vernal pool tadpole shrimp *Lepidurus packardi*	FT	—	—	Vernal pools	Unlikely to be present in project area; no suitable habitat onsite.
FISH					
Green sturgeon *Acipsenser medirostris*	FT	—	—	Ocean; San Francisco Estuary; Sacramento-San Joaquin River Delta; Sacramento River	May sporadically occur in rivers and sloughs.
Delta smelt *Hypomesus transpacificus*	FT	ST	—	San Francisco Estuary; Sacramento-San Joaquin River Delta; Sacramento River	May sporadically occur in rivers and sloughs.
Central Valley steelhead *Oncorhynchus mykiss*	—	FT	—	Ocean; San Francisco Estuary; Sacramento-San Joaquin River Delta; Sacramento River; San Joaquin River	May sporadically occur in rivers and sloughs.
Winter-run Chinook salmon *Oncorhynchus tshawytscha*	FE	SE	—	Ocean; San Francisco Estuary; Sacramento-San Joaquin River Delta; Sacramento River	May sporadically occur in rivers and sloughs.
Spring-run Chinook salmon *Oncorhynchus tshawytscha*	FT	ST	—	Ocean; San Francisco Estuary; Sacramento-San Joaquin River Delta; Sacramento River	May sporadically occur in rivers and sloughs.
Longfin smelt *Spirinchus thaleichthys*	—	ST	—	San Francisco Estuary; Sacramento-San Joaquin River Delta	May sporadically occur in rivers and sloughs.

TABLE 5

Special-Status Species That May Occur In The Proposed Project Area

Species	USFWS	CDFG	CNPS	Habitat	Potential Occurrence
AMPHIBIANS					
California tiger salamander, central population *Ambystoma californiense*	FT	CSC	—	Valley Grassland, Foothill Woodland, Freshwater Wetlands, wetland-riparian	Unlikely to be present in project area; no suitable habitat onsite.
California red-legged frog *Rana aurora draytonii*	FT	CSC	—	Valley Grassland, Foothill Woodland, Freshwater Wetlands, wetland-riparian	Unlikely to be present in project area; no suitable habitat onsite.
REPTILES					
Alameda whipsnake *Masticophis lateralis euryxanthus*	FT	—	—	Coastal Scrub, Coastal Sage Scrub, Chaparral	Unlikely to be present in project area; no suitable habitat onsite.
Giant garter snake *Thamnophis gigas*	FT	ST	—	Freshwater Wetlands, wetland-riparian	May be present in marginal habitat in the vicinity of the project area.
Silvery legless lizard *Anniella pulchra pulchraI*	—	CSC	—	Chaparral, Foothill Woodland, Valley Grassland, wetland – riparian	Unlikely to be present in project area; no suitable habitat onsite.
Western pond turtle *Actinemys marmorata*	—	CSC	—	Foothill Woodland, Valley Grassland, wetland - riparian	May be within the project boundaries.
MAMMALS					
San Joaquin kit fox *Vulpes macrotis mutica*	FE	CT	—	Valley Sink Scrub, Valley Saltbush Scrub, Upper Sonoran Subshrub Scrub, and Annual Grassland	Unlikely to be present in project area; no suitable habitat onsite.
Riparian brush rabbit *Sylvilagus bachmani riparius*	FE	CE	—	Riparian shrub communities	Unlikely to occur on the project site. The only known population exists at Caswell State Park.
BIRDS					
Swainson's hawk *Buteo swainsoni*	—	CT	—	Foothill Woodland, Valley Grassland, wetland - riparian	May be nest within ½ mile of the project boundaries.
Burrowing owl *Athene cunicularia*	—	CSC	—	Foothill Woodland, Valley Grassland	May be within the project boundaries.
Loggerhead shrike *Lanius ludovicianus*	—	CSC	—	Valley Grassland, Foothill Woodland, Freshwater Wetlands	May be within the project boundaries.
Tricolored blackbird *Agelaius tricolor*	—	CSC	—	Freshwater Wetlands, wetland-riparian	Unlikely to be present in project area; no suitable habitat onsite.
California black rail *Laterallus jamaicensis coturniculus*	—	CT	—	Freshwater Wetlands, wetland-riparian	Unlikely to be present in project area; no suitable habitat onsite.

TABLE 5

Special-Status Species That May Occur In The Proposed Project Area

Species	USFWS	CDFG	CNPS	Habitat	Potential Occurrence
Great blue heron		SA			
Double-crested cormorant		SSC			
Snowy egret		SA			

USFWS Federal Listing Categories:
FE - Federal Endangered
FT - Federal Threatened
CDFG State Listing Categories:
CE California Endangered
CT California Threatened
CSC California Species of Special Concern

Special-Status Invertebrate Species and Invertebrate Habitat (Less than Significant with Mitigation Incorporated)

Indian Slough and Black Slough - The project would have no impact on the valley elderberry longhorn beetle or valley elderberry bushes at these sites because of the absence of habitat.

Holt Bend and Trapper Slough - Pipeline recoating at Holt Bend and Trapper Slough would have no direct impact on valley elderberry longhorn beetle (VELB) or valley elderberry bushes because no habitat exists in or directly adjacent to the slough. However, depending on the depth, lateral extent, and duration of dewatering, local groundwater drawdown could affect elderberry bushes (protected VELB habitat) located adjacent to the banks of the sites but outside the project footprint.

No elderberry plants were observed within 100 feet of the Aqueduct right-of-way; however, five plants are present north of the sites, the nearest approximately 56 feet beyond the right-of-way (Figure 3) (EBMUD 2010a). These plants could be affected by temporary dewatering of the slough and localized groundwater drawdown. To ensure no indirect impacts on these plants and to protect them from desiccation during drawdown, EBMUD will implement the following measures to avoid potential adverse affects on valley elderberry bushes and VELB.

Mitigation Measure BIO-1: Protection of Valley Elderberry Bushes Adjacent to Trapper Slough:

- Prior to construction, a qualified biologist or botanist will conduct spring elderberry bush surveys to locate known plants and to identify locations of any new plants.
- Establish and maintain a 100-foot buffer around any elderberry bush with stems measuring one-inch or greater at ground level.
- Erect fencing and flag areas to be avoided during the project activities. In areas where the USFWS has approved encroachment on the 100-foot buffer, a 20-foot exclusion zone, from the drip line of the plants, will be established.
- Field personnel will be briefed on the status of the VELB, avoiding damage to the elderberry plants, the reasons to protect the host plant, and the possible penalties for not complying with these requirements.
- Post signs every 50 feet along the perimeter of the exclusion zone with the following information: "This area is habitat of the valley elderberry longhorn

beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." The signs must be clearly visible and legible from a distance of 20-feet, and must be maintained for the duration of project.

- Supply supplemental water to elderberry bushes in Trapper Slough if negatively affected by dewatering. A botanist or other qualified biologist will determine the need for supplemental watering. If potable water is used for irrigation, the water will be dechlorinated prior to application.

Implementation of Mitigation Measure BIO-1 would reduce dewatering impacts on valley elderberry bushes and VELB to less than significant.

Special-Status Fish Species (Less than Significant Impact)

The following subsections address potential impacts on special-status fish species in the sloughs.

Indian Slough - Recreational boat traffic crosses under the pipes at this location and therefore, both boat traffic and fish passage would be maintained. The containment structure would be supported by a crane positioned on a floating deck barge and would be anchored by temporary pier spuds to prevent lateral movement. The placement and removal of the temporary pier spuds would result in minor localized sediment disturbance and a temporary increase in turbidity. Furthermore, as described in the Project Description, the recoating process would be completed within a sealed containment structure, minimizing the release of particulates. Barge anchoring and recoating would have less than significant impacts on fish.

Indian Slough likely supports green sturgeon, delta smelt, steelhead, winter-run Chinook salmon, spring-run Chinook salmon, and longfin smelt. These species may be present at low densities at the Indian Slough project site during construction. However, no dewatering or pumping would be required. There would be no risk of entrainment and fish passage would be maintained throughout the construction period, which would extend from April to November. Therefore, the proposed project would result in less than significant impacts on fish passage and no mitigation measures would be required.

Trapper Slough - Trapper Slough is located in a remote area of the Delta at the southern boundary of Jones Tract. Green sturgeon, delta smelt, steelhead, winter-run Chinook salmon, spring-run Chinook salmon, and longfin smelt are unlikely to migrate through this area because it is remote and indirectly connected (via pipe) to Whiskey Slough. Further, based on their life history, thermal tolerances, and existing salvage data for the south Delta facilities, these species, with the exception of green sturgeon, are very unlikely to occur in the Trapper Slough project area, particularly during the construction period of July through October. While there are no data available regarding presence or absence of green sturgeon in the Trapper Slough area, salvage data from the state and federal pumps indicates that the peak for juvenile green sturgeon entrainment is in August. However, the avoidance measures intended to minimize project effects on fish resources will also benefit sturgeon in the unlikely event of their presence in the area. Therefore, the proposed project would result in less than significant impacts on fish passage at Trapper Slough and no mitigation measures would be required.

Holt Bend - Holt Bend is in a remote area of the Delta that can only be accessible to fish from one direction, via a culvert pipe from Whiskey Slough. Therefore, the special-status fish species listed above for Indian Slough are unlikely to occur at Holt Bend. In addition, the life history timing,

thermal tolerances, and existing salvage data for the south Delta facilities, green sturgeon, delta smelt, steelhead, winter-run Chinook salmon, spring-run Chinook salmon, and longfin smelt make them very unlikely to occur within the Holt Bend, especially during the construction period. Therefore, the proposed project would result in less than significant impacts on fish passage at Holt Bend and no mitigation measures would be required.

Black Slough - Black Slough is also located in a remote area of the Delta connected to the Stockton Deepwater Channel. Because it is essentially an irrigation ditch, the special-status fish species listed above for Indian Slough are unlikely to occur. Moreover, Black Slough is not tidally influenced and is not connected to any major river or slough, and is likely inaccessible to fish. Based on life history timing, thermal tolerances, water quality in the Stockton Deepwater Channel, and existing salvage data for the south Delta facilities, green sturgeon, delta smelt, steelhead, winter-run Chinook salmon, spring-run Chinook salmon, and longfin smelt are very unlikely to occur in the Black Slough project area, particularly during the construction period of July through October. Therefore, the proposed project would result in less than significant impacts on fish passage at Black Slough and no mitigation measures would be required.

As practicable and applicable at each site, EBMUD would implement a combination of measures to protect resident fish and other aquatic resources, which include:

- Conduct pre-project surveys to determine presence or absence of fish. If fish are observed, implement plan to clear and transport fish from the construction area.
- Properly screen the pumps during the dewatering process to avoid impingement or entrainment of species present.
- Provide fish passage at Trapper Slough for non-Endangered Species Act listed native and sport fish species that may be present within the project site.
- Adequately discharge the water from the dewatering process as to not adversely affect water quality (dissolved oxygen, turbidity) within the receiving waters.
- Reduced dewatered area to a minimum and avoid impacts to the streambed.
- Implement Best Management Practices (BMP) into the project plan to minimize impacts to the surface waters caused by soil erosion.
- Adequately service and clean construction vehicles, including waterborne vessels, to prevent the input of fluids, oils, and lubricants on unprotected soil or into the surface waters

The dewatering process will cause localized disturbance and turbidity. To minimize erosion and sedimentation, EBMUD would control erosion by preparing a Storm Water Pollution Prevention Plan (SWPPP) with BMPs for storm water and restoring disturbed areas by regrading to preconstruction elevations and revegetation. The SWPPP would also require servicing of construction vehicles and barges to minimize the release of chemicals such as including lubricants and fuels onto land or waterways. Further, it would describe techniques to minimize water quality impacts when discharging water from within the water-fill dams. These BMPs are consistent with RWQCB storm water requirements.

Special-Status Amphibians (No Impact)

Special-status amphibians are presumed not to be present within the project area as no suitable habitat occurs within the project sites. Therefore, no impacts to California red-legged frogs or California tiger salamanders will occur. California red-legged frogs are presumed to be extirpated from this area due to the presents of introduced species and the degraded nature of the available habitat within the project sites. California tiger salamanders are presumed not to occur within the project area as the sites are isolated from currently occupied habitats.

Special-Status Reptiles (Less than Significant with Mitigation Incorporated)

Project construction could affect giant garter snakes and western pond turtles at the pipeline crossing and staging sites.

Giant Garter Snakes - Construction of the project has the potential to take individual snakes if they are present in the area subject to disturbance. Giant garter snakes are active during the summer (season defined as May 1 to September 30) and hibernate in upland burrows and refugia during the winter (season defined as October 1 to April 30). During construction, which is proposed during the active period for giant garter snakes, take could occur during the movement of construction equipment and other vehicles, the removal of vegetation, minor grading, and installation of water-fill dams and work platforms. Project construction could result in a temporary loss of habitat for giant garter snakes as upland refugia. Burrows suitable for hibernation could be crushed by earthmoving equipment, and vegetation that functions as upland refugia would be removed from the slough margins and staging areas. This would be a short-term impact to habitat as burrowing mammals would likely recolonize areas disturbed during construction. Upland habitat includes areas above the high tide line subject to disturbance during construction, while aquatic habitat included areas of emergent vegetation within the project construction area. To mitigate potentially significant impacts on giant garter snakes, EBMUD would implement Mitigation Measure BIO-2.

> **Mitigation Measure BIO-2**: Avoidance, minimization, and mitigation measures for giant garter snakes.
>
> EBMUD will implement the following measures including preconstruction surveys, biological monitoring during construction and the implementation of the following protection measures:
>
> - Construction personnel will receive USFWS-approved worker environmental awareness training from a USFWS-approved biologist. The training will include a description of the giant garter snakes, including natural history and habitat, a review of the state and federal listing of the species, the general protection measures to be implemented to protect the species, and a delineation of the limits of the work areas. Employees will be required to sign documents stating that they understand that take of listed species and destruction or damage of their habitat could be a violation of state and federal law.
> - Recoating activities will occur between May 1 and October 1 of each year to avoid the giant garter snake estivation period.
> - Movement of heavy equipment will be confined to existing roadways and the construction work areas defined on project plans to minimize habitat disturbance
> - Any dewatered habitat will remain dry for at least 15 consecutive days prior to removing sediment or filling of the dewatered site (USFWS 2010).

- Clearing will be confined to the minimum area necessary to facilitate construction activities. Giant garter snakes habitat adjacent to the project area will be fenced and avoided by construction workers.
- 24 hours prior to construction activities, the project area will be surveyed for giant garter snakes. Surveys of the project area will be repeated if a lapse in construction activity of two weeks or greater occurs.
- If a snake is encountered during construction, activities will cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed. Any sightings and any incidental take will be reported to the USFWS and CDFG immediately.
- At the end of construction, terrestrial and wetland habitat disturbed during construction and removal of the gates will be restored to pre-construction conditions. Restoration work may include replanting or seeding with plant species that were removed during construction and removal activities. All exclusion fencing and construction related materials will be removed from the site.
- If the species is observed at the construction site at any time during construction, work will cease immediately within 200 feet of the area until the snake leaves the work area on its own and is out of harm's way. USFWS and CDFG will be contacted immediately.
- A monitoring report of all activities associated with surveys and mitigation for this species will be submitted to CDFG and USFWS no later than one month after construction is completed.
- Not less than 48 hours prior to the start of any construction activities, including the removal of the structures, the USFWS-approved biologist will monitor the installation of exclusionary fencing around the terrestrial portion of the area subject to disturbance. The fencing will contain one-way exits so snakes within the fenced area will be able to escape but not reenter.
- Barrier fencing will be installed and maintained along the perimeter of the active project and staging sites. Silt cloth will be used for the fencing material. Installation will be as follows:
    1. The fencing material will be trenched at least 6 inches deep and the soil compacted to prevent animals from passing under the fence.
    2. The fence height will be a minimum of 36 inches aboveground, with the stakes on the interior of the fence to minimize snakes using them to cross the fence.
    3. All openings will have a wing on each side that turns back onto the outside of the fence to redirect animals away from the opening. The wing will turn back a minimum of 8 feet, ending parallel and within 1 to 1.5 feet of the fence.
    4. The integrity of the fence will be checked a minimum of twice a week, with at least two days separating each inspection. In addition, the integrity of the fence will be checked after any significant rain event, greater than 1 inch of rain per day.
    5. Repairs to the fence will be completed within 24 hours of the first detection of a fence breach. Site will be re-surveyed immediately after fence has been repaired.
    6. Fence material will remain straight and upright with no sags. Sags may allow animals to cross the fence. No material will be allowed to lean on or cross over the fence.

7. All vegetation within two feet of the outside of the fence will be maintained at a height of 2 inches or less to limit the amount of suitable habitat near the fence.

- Habitat features suitable for giant garter snakes within the perimeter of the fence will be removed under the direct supervision of the USFWS-approved biologist, and any snake detected will be allowed to leave on its own. The USFWS and CDFG will be notified within 24 hours of any giant garter snakes (living or dead) observed during construction.
- In order to minimize the effects of loss and disturbance of habitat on giant garter snakes, habitat will be replaced based on the acreage and on the duration of disturbance. Compensation for the loss of upland habitat will include restoration of upland refugia, the acquisition of suitable habitat offsite, and/or the purchase of conservation credits. The acreage of restored and preserved habitat will be determined through consultation with the CDFG and USFWS, taking into account the time of year when construction activities occur and the quality of on-site habitat.

Implementation of Mitigation Measure BIO-2 would reduce the potential for impacts on giant garter snake to less than significant.

Western Pond Turtle - Western pond turtle (and the subspecies, northwestern pond turtle) have been documented in the Delta. Construction of the project, including installing water-fill dams and dewatering could affect western or northwestern pond turtles if present in the project area. By implementing Mitigation Measure BIO-3, EBMUD would reduce the potential for impacts on western pond turtle to less than significant.

Mitigation Measure BIO-3: To avoid impacts on the western pond turtle, EBMUD will ensure that the following measures are implemented:

- Before construction, a worker environmental training awareness program will be conducted by a qualified biologist. The training will include instruction regarding species identification, natural history, aquatic and upland nesting habitat, the general conservation measures to be implemented to protect the species, and a delineation of the limits of work.
- If juvenile or adult western pond turtle are found aestivating or hibernating on the project site, construction work will cease within 50 feet of the area and the biologist will move the individuals out of the construction area to suitable habitat prior to resuming construction. If a nest is found in the construction area, CDFG will be notified immediately to determine appropriate measures to protect or relocate the nest. Surveys must be conducted every year in which construction activities occur.
- Barrier fencing will be installed and maintained along the perimeter of the active project and staging sites. Silt cloth will be used for the fencing material. Installation will be as follows:
- The fencing material will be trenched at least 6 inches deep and the soil compacted to prevent animals from passing under the fence.
- The fence height will be a minimum of 36 inches aboveground, with the stakes on the interior of the fence to minimize turtles using them to cross the fence.
    1. All openings will have a wing on each side that turns back onto the outside of the fence, to redirect animals away from the opening. The wing will

turn back a minimum of 8 feet, ending parallel and within 1 to 1.5 feet of the fence.

2. The integrity of the fence will be checked a minimum of twice a week, with at least two days separating each inspection. In addition the integrity of the fence will be checked after any significant rain event, greater than 1 inch of rain per day.
3. Repairs to the fence will be completed within 24 hours of the first detection of a fence breach.
4. Fence material will remain straight and upright with no sags. Sags may allow animals to cross the fence. No material will be allowed to lean on or cross over the fence.
5. All vegetation within 2 feet of the outside of the fence will be maintained at a height of 2 inches or less to limit the amount of suitable habitat near the fence.

- A letter report documenting survey methods and findings will be submitted to CDFG following the completion of the preconstruction survey.

Implementation of Mitigation Measure BIO-3 would reduce impacts on the western pond turtle to less than significant.

Special-Status Avian Species (Less than Significant with Mitigation Incorporated)

Potential impacts to special-status birds could occur from clearing construction and staging areas and from construction vehicle traffic. Project construction could affect nesting birds at any of the slough crossings including Swainson's hawk, burrowing owls, other raptors, and colony nesting birds. Large mature trees, 30 plus feet tall, could provide nesting habitat for raptors, owls, herons, cormorants, and egrets. Although recoating would not remove the trees, project activities could disrupt raptors and colony-nesting species if present. Emergent aquatic vegetation along the slough margins may provide nesting habitat for marsh-nesting birds. Further, the Aqueduct pipes and associated bents, culverts, and structures could provide nesting habitat for cliff swallows. Ground squirrel burrows exist near the crossings, which could provide nesting habitat for burrowing owls.

No suitable nesting habitat for California black rails and tri-colored blackbirds was observed during the site surveys. The lack of large dense stands of aquatic emergent vegetation needed by tri-colored black birds and California black rails would preclude nesting on the site. The lack of suitable riparian shrub would exclude nesting by loggerheaded shrikes.

Swainson's Hawk - The presence of the Swainson's hawk is likely to occur in the project area. Recoating could affect the Swainson's hawk nesting season (mid-March to late July) and fledging, which can extend well into August, particularly if the first nesting attempt fails. Recoating could affect nesting behavior if it occurs within 0.25 mile of an active nest with young birds that have not fledged. Therefore, EBMUD will implement BIO-4.

Mitigation Measure BIO-4: Conduct preconstruction surveys for Swainson's hawk and implement avoidance or protection activities, if present:

- Surveys consistent with the Swainson's Hawk Technical Advisory Committee's Recommended Survey Methodology (May 31, 2000) will be conducted by a wildlife biologist with knowledge of Swainson's hawk reproductive behavior within 0.25 mile of site disturbance activities including recoating and staging areas.

- If occupied Swainson's hawk nests are detected within 0.25 mile of site disturbance activities, site disturbance will be postponed until a qualified nest monitor determines that the young birds have fledged and are no longer reliant on the nest site.
- If site disturbance is proposed within 0.25 mile of an active nest before the young birds have fledged, EBMUD will consult with CDFG to determine the appropriate course of action, which may include nest monitoring by a biologist with stop-work authority in the event of disturbances to nesting behavior, and a reduced no-disturbance buffer if site conditions suggest that a reduced buffer area would not disturb nesting behavior (based on amount and type of ongoing disturbance, such as site preparation).

Implementation of Mitigation Measure BIO-4 would reduce the potential for construction-related impacts on Swainson's hawk to less than significant.

Burrowing Owl - The project area supports suitable habitat for burrowing owls and ground squirrel burrows may be present in the staging areas. Construction activities, including site preparation, clearing, and equipment storage could result in a direct take of individuals or result in the failure of an active nest, if burrowing owls are present. Disturbing these owls, if present during the nesting season (February 1 through August 31), could potentially result in significant impacts, such as nest abandonment and mortality of young. Accordingly, EBMUD would implement Mitigation Measure BIO-5, which consists of pre-construction surveys, passive relocation, and avoidance of nests. These measures are likely to be very similar to the conditions that would be imposed by CDFG in the Lake and Streambed Alteration Agreement. Recoating would not result in a permanent loss of suitable habitat for burrowing owl because the crossing sites and staging areas would be restored to existing conditions.

Mitigation Measure BIO-5: For construction during the nesting season (February 1 through August 31), conduct pre-construction surveys for the western burrowing owl and, avoidance or mitigation for owls, if present.

- EBMUD will conduct surveys and mitigation according to The California Burrowing Owl Consortium Burrowing Owl Survey Protocol and Mitigation Guidelines (1993) and the CDFG Staff Report on Burrowing Owl Mitigation (1995). These documents state that mitigation actions should be carried out from September 1 to January 31.
- Surveys consistent with the California Burrowing Owl Survey Protocol and Mitigation Guidelines (1993) will be conducted in all construction areas as well as a 500-foot buffer. A survey to determine if suitable burrows (larger than 3.5 inches diameter) are present in all areas of ground disturbance will be conducted. If no burrows suitable for burrowing owls are present in areas of ground disturbance then no other mitigation is necessary.
- If suitable burrows are present in the project area then all areas of ground disturbance (including access roads) will be surveyed for occupancy by burrowing owls within 30 days of initial ground disturbance. The California Burrowing Owl Survey Protocol and Mitigation Guidelines (1993) calls for up to four surveys on four separate days to determine burrowing owl presence or absence.
- No disturbance will occur within 250 feet of occupied burrows during the breeding season (February 1 through August 31). The 250-foot buffer will be clearly demarcated. If burrowing owls are present within 160 feet of construction during the non-breeding season (September 1 through January 31), a site-specific impact

avoidance plan will be prepared by a qualified biologist and submitted to CDFG for approval. The avoidance plan will describe passive relocation procedures and maintenance of one-way doors during site disturbance, if applicable, and habitat restoration after the project is completed. Passive relocation procedures will include installation of one-way doors in burrow entrances by a qualified biologist. One-way doors will be left in place not less than 48 hours to ensure that owls have left the burrow prior to excavation of the burrow by the qualified biologist.

- If construction activities result in the loss of occupied habitat, mitigation consistent with the CDFG Staff Report on Burrowing Owl Mitigation Guidelines (1995) will be provided by permanently protecting not less than 6.5 acres of suitable habitat per pair or unpaired resident owl at a location acceptable to CDFG. Long-term management and monitoring of protected habitat acceptable to CDFG will be provided.
- Before land disturbance, a worker environmental training awareness program will be conducted by a qualified biologist. The training will include instruction regarding species identification, natural history, habitat, and protection needs. If the species is observed at the construction site at any time during construction, construction work will cease within 250 feet of the area until the owl can be moved to a safe location consistent with CDFG regulations.
- A monitoring report of all activities associated with surveys and mitigation for this species will be submitted to CDFG within one month after construction. If owls are observed in the project area, monitoring reports will be submitted to CDFG before any action is taken. California Natural Diversity Database reports will be submitted within one month of each observation with a copy to the local CDFG biologist.

Implementation of Mitigation Measure BIO-5 would reduce the potential for construction-related impacts on western burrowing owl to a less-than-significant level.

Other Raptors and Migratory Nesting Birds (Less than Significant with Mitigation Incorporated)

Suitable nesting habitat for various raptors, as well as other migratory bird species, is present on or near the project site. Numerous species have the potential to nest on site, either in the marsh areas fringing the sloughs, or within nearby trees and shrubs. These could include raptors such as the northern harrier and red-tailed hawk, and other birds protected by the Migratory Bird Treaty Act. Potential impacts on migratory birds include the destruction of eggs or occupied nests, direct mortalities of young, and the abandonment of nests with eggs or young birds prior to fledging. Potentially significant impacts would result from project construction activities that would destroy occupied nests or cause migratory birds to abandon their nests. Recoating would occur toward the end of the nesting season and could potentially result in impacts on protected nesting birds. Therefore, EBMUD would implement Mitigation Measure BIO-6, which would require EBMUD to protect occupied nests of migratory passerines or raptors and breeding birds. These mitigation measures are likely to be very similar to the conditions that would be imposed by the CDFG as part of the Section 1602 Streambed Alteration Program Agreement.

Mitigation Measure BIO-6: Conduct preconstruction surveys for nesting birds prior to construction activities and implement avoidance or mitigation activities for nesting birds, if present:

- A qualified wildlife biologist will conduct a pre-construction survey for nesting migratory passerine birds and nesting raptors no more than two weeks prior to the start of construction, including tree removal, grubbing, pruning, grading.
- If nests of either migratory birds or birds of prey are detected on or adjacent to the project sites, a 250-foot no-disturbance buffer will be fenced with orange construction fencing or equivalent. If an active raptor nest is found within 250 feet of the project, a determination will be made by a qualified biologist as to whether construction activities might affect the active nest or disrupt reproductive behavior. If it is determined that construction will not affect an active nest or disrupt breeding behavior, construction may proceed without any restriction or mitigation measure. If it is determined that construction will affect an active raptor nest or disrupt reproductive behavior or rearing of young, then avoidance is the only mitigation available.
- The buffer will be observed until August 15, or sooner, if the qualified biologist determines that the young are foraging independently or the nest has failed.
- If it is determined that construction activities are likely to disrupt raptor breeding, construction activities will remain outside of an appropriate buffer zone until a qualified biologist determines that the subject birds are not nesting or until any juveniles are no longer using the nest as their primary day and night roost. The ultimate size of individual buffers can be adjusted, following a site evaluation by a qualified raptor biologist, based on the species involved, topography, lines of site between the work area and the nest, physical barriers, and the ambient level of human activity (e.g., farming activities, recreation, road traffic). Site evaluations and buffer adjustments will be made in consultation with the local CDFG representative and/or the USFWS Division of Migratory Bird Management. Tree removals or pruning and construction activities conducted outside of the breeding season (September 1 through January 31) may proceed without restrictions.
- The size of the no-disturbance buffer will be determined by a qualified wildlife biologist in consultation with CDFG and the USFWS, and will take in to account local site features and pre-existing sources of potential disturbance. If more than 15 days elapses between the survey and site disturbance, the survey will be repeated.
- If active nests are found within 100 feet of the project, a determination will be made by a qualified biologist as to whether construction activities might impact the active nest or disrupt reproductive behavior. If it is determined that construction will not affect an active nest or disrupt nesting behavior, construction may proceed without any restriction or mitigation measure. If it is determined that construction is likely to have an adverse affect on breeding of a migratory bird, then avoidance is the only mitigation available.
- If it is determined that construction activities are likely to disrupt passerine nesting, construction activities will cease within an appropriate buffer zone until a qualified biologist determines that the subject birds are not nesting or until any juveniles are no longer using the nest as their primary day and night roost. The ultimate size of individual buffers can be adjusted, following a site evaluation by a qualified biologist, based on the species involved, topography, lines of site between the work area and the nest, physical barriers, and the ambient level of human activity (e.g., farming activities, road traffic). Site evaluations and buffer adjustments will be made in consultation with the local CDFG representative and/or the USFWS Division of Migratory Bird Management. Construction related tree removals or pruning, and construction activities conducted outside of the breeding season (September 1 through January 31) may proceed without restrictions.

Implementation of Mitigation Measure BIO-6 would reduce impacts on nesting birds to less than significant.

Colony Nesting Birds - A qualified biologist will conduct a preconstruction survey within one to two weeks of the start of construction to determine if any colony nesting birds are within or adjacent to the project area.

If it is determined that a breeding colony does exist (March through August) within or adjacent to the proposed construction and staging area, the contractor will avoid the area by 0.25 miles for herons, cormorants, and egrets. A 250-foot buffer should be established for cliff swallows nesting colonies and protected with an exclusion fence. These exclusion zones will remain in place until the young fledged or are no longer dependent upon the natal site for survival.

IVb & c. Less than Significant with Mitigation Incorporated. The Sacramento-San Joaquin Delta is the largest estuary on the west coast and provides habitat to numerous special-status plants, riparian habitat, and other sensitive natural communities. The paragraphs below address project impacts on special-status plants as well as freshwater marsh and riparian vegetation. It describes potential site-specific impacts on special-status species and, if necessary, describes associated mitigation measures.

Special-Status Plants (Less than Significant with Mitigation Incorporated)

Of the rare plants determined to have a potential to occur on the study area, several are summer blooming plants. Within the California Natural Diversity Database, no records exist of special-status plant species inside the affected project sites. No special-status plant species were found during the site visits and potential habitat for these species is limited. However, individual special-status plants present in the project area (Table 6) could be affected by construction, including staging areas. By implementing Mitigation Measure BIO-7, EBMUD would reduce the potential for construction-related impacts on special-status plants to a less-than-significant level.

TABLE 6
SPECIAL-STATUS PLANTS THAT MAY OCCUR IN THE PROPOSED PROJECT AREA

Species	USFWS	CDFG	CNPS	Habitat	Potential Occurrence
PLANTS					
Astragalus tener var. tener alkali milk-vetch	—	—	List 1B.2	Valley Grassland, Alkali Sink, Freshwater Wetlands, wetland-riparian – playas, vernal-pools	Unlikely to be present in project area; no suitable habitat onsite.
Atriplex joaquiniana San Joaquin spearscale	—	—	List 1B.2	Shadscale Scrub, Valley Grassland – meadows	May be present in marginal habitat in the vicinity of the project area.
Carex comosa bristly sedge	—	—	List 2.1	Freshwater Wetlands, wetland-riparian – lake-margins, edges	May be present in marginal habitat in the vicinity of the project area.
Carex vulpinoidea brown fox sedge	—	—	List 2.2	Freshwater Wetlands, wetland-riparian – riparian, freshwater-marsh	Unlikely to be present in project area; marginally suitable habitat onsite; occurs under natural conditions in wetlands.
Eryngium racemosum Delta button-celery	—	SE	List 1B.1	Freshwater Wetlands, wetland-riparian – riparian	May be present in marginal habitat in the vicinity of the project area.
Hibiscus lasiocarpos woolly rose-mallow	—	—	List 2.2	Freshwater Wetlands, wetland-riparian – freshwater-marsh	May be present in marginal habitat in the vicinity of the project area; occurs under natural conditions in wetlands.
Lathyrus jepsonii var. jepsonii Delta tule pea	—	—	List 1B.2	Freshwater Wetlands, wetland-riparian – freshwater-marsh, brackish-marsh	May be present in marginal habitat in the vicinity of the project area.
Lilaeopsis masonii Mason's lilaeopsis	—	SR	List 1B.1	Freshwater Wetlands, wetland-riparian – riparian, freshwater-marsh, brackish-marsh	May be present in marginal habitat in the vicinity of the project area.
Limosella subulata Delta mudwort	—	—	List 2.1	Freshwater Wetlands, wetland-riparian – freshwater-marsh	May be present in marginal habitat in the vicinity of the project area.
Scutellaria galericulata marsh skullcap	—	—	List 2.2	Yellow Pine Forest, Freshwater Wetlands, wetland-riparian – meadows, freshwater-marsh	May be present in marginal habitat in the vicinity of the project area.
Symphyotrichum lentum Suisun Marsh aster	—	—	List 1B.2	Brackish and freshwater-marsh	May be present in marginal habitat in the vicinity of the project area.
Tropidocarpum capparideum caper-fruited tropidocarpum	—	—	List 1B.1	Valley Grassland	Unlikely to be present in project area; no suitable habitat onsite.

California Native Plant Society (CNPS) Categories:

1A Plants Presumed Extinct in California
1B Plants Rare, Threatened, or Endangered in California and elsewhere
2 Plants Rare, Threatened, or Endangered in California, but more common elsewhere
3 Plants about which we need more information
4 Plants of Limited Distribution
0.1 Seriously threatened in California
0.2 Fairly threatened in California
0.3 Not very threatened in California

Mitigation Measure BIO-7: Conduct preconstruction surveys for rare plants and avoidance or mitigation for rare plants, if present:

- Project boundaries will be delineated and flagged prior to construction. All construction activities will be conducted within the delineated project boundaries.
- Staging areas and construction access points will be delineated in the field away from special-status plants and all staging will occur within these designated areas.
- Rare plant surveys, timed to coincide with the flowering period of target species (spring and summer beginning in 2010) will be conducted by a qualified botanist or biologist to determine if any special-status plant species are present within the project area.
- If rare plants are present within the project area, the feasibility of avoidance will be evaluated. Avoidance would include the installation of orange construction fencing (wildlife friendly) around the plants prior to site disturbance and ensuring that rare plants are not disturbed during construction.
- If surveys timed to coincide with the flowering period for target species cannot be performed for any reason, presence will be assumed. Prior to construction, a thorough search for plants sharing the vegetative characteristics of target species will be made, and if present, those plants will be assumed to be sensitive species. Individual plants found will be subject to the measures described below.
- If avoidance is not feasible, a mitigation plan approved by CDFG will be developed and implemented, including but not restricted to the following measures:
    1. The number and area of rare plants affected by the project will be measured and documented.
    2. Affected plant(s) will be transplanted to a suitable nearby area or seed will be collected and sown in a nearby area with similar habitat characteristics (one possible site is the Wildlands, Inc., marsh restoration area located on Holland Tract or the in-channel islands protected as sanctuaries by the Delta Wetlands Project).
    3. Mitigation plantings will be monitored for survival, plant numbers and area for a period of five years.

Implementation of Mitigation Measure BIO-7 would reduce impacts on rare plants to less than significant.

Sensitive natural communities (Less than Significant with Mitigation Incorporated)

This subsection evaluates potential environmental impacts on sensitive natural communities comprised of wetlands and riparian habitat. The potential impacts to wetlands and riparian habitat include the placement of water-filled dams for dewatering, placement of work platforms on the slough bottom, desiccation of in-channel freshwater marsh areas, and the disruption of banks.

The project would result in placement of 1,794 linear feet of rubber water-fill dams (covering an area of approximately 6,580 square feet [0.15 acre]) into jurisdictional waters of the United States, including small areas of wetlands and unvegetated waters subject to USACE jurisdiction under the federal Clean Water Act.

Impacts to the sensitive communities would be of limited spatial extent and temporary, if any. The project sites are highly disturbed, have a high occurrence of non-native species, and dominated barren earth, ruderal habitat, riprap, rural development, and agricultural lands. Disturbances associated with the project would be limited to small areas (see Table 7 and 8) and the project

would not result in changes in habitat type. Implementation of mitigation measure BIO-8 would mitigate potential impacts to sensitive natural communities to less than significant levels.

Indian Slough - At Indian Slough, the containment structure would be supported on the existing concrete pile caps and associated equipment would be placed on a floating deck barge anchored by temporary pier spuds. Therefore, wetland impacts would be limited to the area penetrated by the anchor spuds. There are no riparian communities within the Indian Slough site.

Trapper Slough - Construction at Trapper Slough could require dewatering and a conventionally supported containment structure. A previously constructed road on the north side of Aqueduct No. 3 that extends from Cook Road several hundred feet to the west would provide access to all the pipelines and a staging area for the dewatering process, reducing wetland impacts. This road is dominated by barren earth and ruderal vegetation. Additional staging areas would be located in upland areas. The dewatering process using water-fill dams would affect approximately 3,360 square feet of open water, or unvegetated waters of the United States while impacts on freshwater marsh would be minimal (Table 7).

The Trapper Slough project site support small patches of riparian scrub and riparian woodland (Table 8). These areas could be affected by dewatering and containment structures supports. Direct impacts on the thin, linear patches of riparian vegetation would be minimal; however, vegetation along the banks within the dewatered area could be stressed during the dewatering period.

Holt Bend - The Holt Bend project site would require dewatering and removal of approximately 156 CY of sediments would be removed, affecting 3,000 square feet of unvegetated waters of the United States (sediment removal and dewatering) and 800 square feet of small patches of freshwater wetland (Table 7).

Holt Bend project site supports a small patch of riparian scrub within the proposed staging area and along the banks within the dewatered area (Table 8). These areas could be stressed during the dewatering period.

Black Slough - Black Slough has been altered by excavation, but continues to support small patches of freshwater marsh. Construction at Black Slough would require dewatering and a conventionally supported containment structure, affecting 2,772 square feet of unvegetated waters of the United States. In addition, approximately 140 CY of sediment will be removed, affecting an additional 2,052 square feet of unvegetated waters of the United States. Placement of the water-fill dams would result in the loss of 108 square feet of freshwater wetland. There are no riparian communities within the Black Slough site.

The project would affect small areas of vegetated emergent wetland or freshwater wetland and riparian vegetation at the margins of the slough where the water-fill dams would be placed. The project could also affect vegetated wetlands and riparian vegetation by causing erosion and sedimentation or the release of contaminants. As required by state and federal stormwater regulations, EBMUD would prepare a SWPPP outlining BMPs designed to protect surface water quality during and after construction. Such BMPs would include erosion control, slope stabilization, sediment control, non-storm water management, restrictions on equipment fueling and maintenance areas in proximity to the slough channel. With the incorporation of stormwater BMPs, these impacts would be less than significant but mitigation would be required for direct disturbances.

Potential impacts to wetlands and/or riparian areas would occur at each site. Tables 7 and 8 present summaries of permanent and temporary impacts on each habitat type and was developed based on aerial photographs of the sites. EBMUD has determined that although the loss of freshwater wetland and riparian vegetation is small and temporary, the loss is significant from a habitat and water quality standpoint and mitigation measures would be required.

TABLE 7

Temporary Impacts On Wetlands, Habitat Type/ Impacts

(Square Feet)

Milepost	Dewatered Area (Hydrologic Effects)	Freshwater Wetland (Indirect effects)	Freshwater Wetland (Direct Effects)	Open Water Habitat (Direct Effects of Dams and Sediment Removal)
INDIAN SLOUGH				
Barge spuds				24
TRAPPER SLOUGH				
Water-fill dams	137,172	18,300	400	3,360
Containment structure supports			320	
Work platform supports			4,900	
HOLT BEND				
Water-fill dams	10,500	1,600	800	2,500
Sediment removal				500
BLACK SLOUGH				
Water-fill dams	2,052	2052	720	720
Containment structure supports			8	
Work platform supports			108	
Sediment removal				2052
Total (square feet)	**149,724**	**21,952**	**7,256**	**9,156**
Total (acres)	**3.44**	**0.5**	**0.17**	**0.21**

Notes: *1. Dewatered Area includes the area between the water-fill dams affected by dewatering only.*
2. Indirect effects on freshwater wetlands would result from dewatering, not placement of water-fill dams or other equipment.
3. Direct effects on freshwater wetlands include impacts resulting from placement of fill (water-fill dams), and structural supports for work platforms and containment systems.
4. Open Water Habitat includes the area affected directly by water-fill dams.

TABLE 8

Temporary Impacts on Riparian Habitat, Habitat Type/Impacts
(Square Feet)

Milepost	Riparian Scrub (Direct Effects)	Riparian Scrub (Indirect effects)	Riparian Woodland (Direct Effects)	Riparian Woodland (Indirect Effects)
INDIAN SLOUGH				
Barge spuds	200		100	
TRAPPER SLOUGH				
Water-fill dams	200		1400	
Containment structure supports				
Work platform supports				
HOLT BEND				
Water-fill dams	400			
Sediment removal				
BLACK SLOUGH				
Water-fill dams				
Containment structure supports				
Work platform supports				
Sediment removal				
Total				

Notes: 1. Dewatered Area includes the area between the water-fill dams affected by dewatering only.
2. Indirect effects on freshwater wetlands would result from dewatering, not placement of water-fill dams or other equipment.
3. Direct effects on freshwater wetlands include impacts resulting from placement of fill (water-fill dams), and structural supports for work platforms and containment systems.
4. Open Water Habitat includes the area affected directly by water-fill dams.

Given the wetland impacts outlined in Table 7 and 8, EBMUD would implement Mitigation Measure BIO-8, which outlines measures to mitigate temporary construction impacts on sensitive natural communities. Specifically, temporary impacts would be generally restored to pre-construction grade and condition: EBMUD would restore habitats onsite at a 1:1 ratio or greater, as determined in consultation with applicable regulatory agencies. EBMUD would also work with the construction contractor regarding the placement of the water-fill dams to minimize the area affected and minimize impacts on wetlands, the streambed, and riparian vegetation.

EBMUD would also be required to obtain permits under Sections 404 and 401 of the Clean Water Act, and Section 1600, et seq., of the California Fish and Game Code, to comply with the "no net wetlands loss" policies of the USACE (Executive Order 11990), RWQCB, and CDFG (Executive Order W-59-93), and to restore or rehabilitate impacted wetlands and other waters of the United States or waters of the State (see impact assessment for waters of the State below). Potential impacts to wetlands would be addressed by complying with state and federal permit requirements, which are likely to be very similar to the mitigation measure below.

This recoating project likely qualifies for a nationwide permit because of the small quantity of wetlands involved and the project recoats an existing structure without any significant change. The nationwide permit is a streamlined permit process, although other compliance efforts, such as Federal Endangered Species Act, are identical. If the USACE decides that a project is ineligible for a nationwide permit, then a Section 404 Individual Permit would be required. The requirements of a Section 404 nationwide permit allow less than 0.5 acre of permanent impacts on federal-jurisdiction wetlands. The nationwide permits that may apply to the recoating project include No. 12, Utility Line Activities; No. 13, Bank Stabilization; and No. 33, Temporary Construction, Access, and Dewatering. Together, these permits would allow the required utility line maintenance, the temporary structures required to complete the work (e.g., work platforms), dewatering, and bank stabilization. Nationwide permits can be "stacked" together, provided that the overall affected area of United States waters or jurisdictional waters does not exceed 0.5 acre, as established by USACE regulations.

If the project qualifies for a nationwide permit, EBMUD would be required to notify the USACE. The project would also be required to comply with Federal Endangered Species Act, the National Historic Preservation Act Section 106 cultural resources compliance, and Clean Water Act Section 401, concerning the RWQCB water quality certification, which is the same regardless of what type of USACE permit is required.

Mitigation Measure BIO-8: Restoration of temporary impacts on sensitive natural communities:

- Wetland and riparian surveys will be conducted by a qualified botanist (or biologist) prior to the start of construction at each site to identify vegetated wetlands.
- In consultation with the botanist, the construction contractor will place protective fencing (wildlife friendly) around vegetated wetland areas that can be avoided.
- The botanist (or biologist) and construction contractor will collaborate regarding placement of the water-fill dams to minimize impacts on freshwater wetlands in the slough channel and allow the required clearance for work platforms.
- Staging areas and construction access points will be located in upland areas that minimize disturbances of wetland area and riparian vegetation.
- The construction contractor will take appropriate measures to maintain normal downstream flows and minimize flooding to the maximum extent practicable.
- Supplemental water will be applied to vegetated wetlands and riparian areas within the dewatered area. A botanist or other qualified biologist will determine the need for supplemental watering. If potable water is used for irrigation, the water will be dechlorinated prior to application.
- EBMUD will provide compensation for temporary impacts on freshwater wetlands and riparian vegetation lost during construction that could not be maintained through watering at a 1:1 ratio. EBMUD will prepare a restoration plan outlining the specific methods, monitoring, and success criteria for revegetation. The plan will be submitted to the appropriate regulatory agencies for review and approval.
- Impacts on wetlands and riparian areas not preserved by providing supplemental water will be mitigated at a 1:1 ratio by replanting native plant materials to restore freshwater marsh to the site.
- Any exposed slopes and stream banks will be stabilized immediately upon completion of construction.

- The construction contractor will use a flow dissipation structure or device to protect sensitive vegetation in the adjacent reach of the slough from damage from dewatering flows.

No permanent loss of wetlands will occur from placement of fill or excavation of wetlands. EBMUD is not proposing mitigation for temporary loss of open water habitat.

Implementation of Mitigation Measure BIO-8 would reduce impacts on sensitive natural communities to less than significant.

IVd. Less than Significant Impact. Terrestrial wildlife (excluding birds) in the project area are resident species and generally not migratory. The proposed project involves repainting an existing pipeline; no new structures would be built. The riparian habitats associated with the irrigation ditches along the Aqueduct likely serve as local wildlife movement and dispersal corridors. While construction activities may result in temporary disturbance of these corridors, they would not result in the permanent loss or blockage of these areas. There are no known wildlife nursery sites near the project areas. In addition, the Aqueduct right-of-way does not block or interfere with any known regional wildlife movement corridors.

Delta waterways are known migration corridors for migratory fish species in the Delta. Placement of temporary water-fill dams and work platforms could inhibit fish movement; however, because three of the slough crossings occur in isolated areas (Trapper Slough, Holt Bend, and Black Slough), migratory fish would not occur in these areas and construction activities would not block or otherwise interfere with fish migration. Indian Slough would not be dewatered.

The project would not interfere substantially with resident or migratory fish movement. Further, project would not substantially inhibit movement of wildlife or block resident or migratory wildlife corridors or the use of wildlife nursery sites. Therefore, the project would have less than significant impacts on fish and wildlife movement and migration and no mitigation measures would be required.

IVe. Less than Significant Impact. The project would not conflict with any of the policies or goals described in the Contra Costa County (2005) or San Joaquin County (1992) General Plans because the projects would be a temporary maintenance project and would be designed to minimize impact on natural resources. The proposed water-fill dams, work platforms, and containment systems are all designed to minimize impacts. This is consistent with Contra Costa County goals to preserve waterways in their natural state. The project would not significantly affect any "Significant Ecological Resource Areas" that are defined by one or more of the following characteristics: (1) areas containing rare, threatened and endangered species; (2) unique natural areas; and (3) wetlands and marshes (Contra Costa County 2005). Further, the project would be conducted during summer and would not substantially affect resident or migratory fish through the use of water-fill dams and avoiding fish migration periods.

Similarly, the project would not substantially affect waterways designated as "Significant Natural Resource Areas" as designated by San Joaquin County (1992). Further, the project would be consistent with goals to protect biological and ecological resources including wetlands and riparian areas.

The project would accomplish its primary goal of preserving water supply infrastructure while protecting sensitive aquatic resources and is therefore consistent with policies that stress the preservation and enhancement of sensitive biological resources. Therefore, the project would have

less than significant impacts on conflicts with local policies or ordinances protecting biological resources and no mitigation measures would apply.

IVf. No Impact. The proposed project would conform to the provisions of all existing Habitat Conservation Plans that apply to the project sites. The East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan (HCP/NCCP) boundaries include Indian Slough (East Contra Costa County Habitat Conservation Plan Association 2006) and the San Joaquin County Multi-Species Conservation and Open Space Plan (SJMSCP) (SJCOG 2000) boundaries include Trapper Slough, Holt Bend, and Black Slough. EBMUD is not a signatory to the HCP/NCCP or the SJMSCP and as such, the project will have to obtain all applicable permits. Thus there would be no significant impacts from the proposed project.

V. CULTURAL RESOURCES **Would the project:**	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Cause a substantial adverse change in the significance of a historical resource as defined in section 15064.5?				X
b) Cause a substantial adverse change in the significance of a unique archaeological resource as defined in section 15064.5?		X		
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		
d) Disturb any human remains, including those interred outside of formal cemeteries?		X		

DISCUSSION

Va. Less than Significant Impact. A records search for the project conducted at the Central California Information Center and the Northwest Information Center of the California Historical Resources Information System identified that the Mokelumne Aqueduct appears to be eligible for inclusion on the California Register of Historical Resources (Central California Information Center 2009, Northwest Information Center 2009). However, the Mokelumne Aqueducts are not identified as a historical resource. The record searches did not identify any known historical resources in the project vicinity (Central California Information Center 2009 and Northwest Information Center 2009). Therefore, the project would not cause a substantial adverse change in the significance of a historical resource and no mitigation measures would be required.

Vb. Less than Significant with Mitigation Incorporated. The record searches for the project did not identify any unique archaeological resources in the project vicinity (Central California Information Center 2009, Northwest Information Center 2009). Although there are no known archeological resources in the project vicinity, the project has the potential to disturb unknown or undiscovered resources because it includes ground-disturbing activities. Therefore, mitigation measures would be required to reduce this impact to a less-than-significant level.

> **Mitigation Measure CULT-1:** If archeological resources are discovered or accidentally disturbed during construction, the contractor will stop all work within the immediate vicinity until a qualified archaeologist can evaluate the discovery and provide

recommendations. EBMUD will provide the construction contractor with the archeologist's contact information prior to initiation of construction activities.

Implementation of Mitigation Measure CULT-1 would reduce impacts on unique archeological resources to less than significant.

Vc. Less than Significant with Mitigation Incorporated. According to the University of California Museum of Paleontology there are no known paleontological or other unique geologic features in the project vicinity (University of California Museum of Paleontology 2010). However, the project has the potential to disturb unknown or undiscovered resources because it includes ground-disturbing activities. Therefore, mitigation measures would be required to reduce this impact to a less-than-significant level.

Mitigation Measure CULT-2: If paleontological resources are discovered or accidentally disturbed during construction, the contractor will stop all work within the immediate vicinity until a qualified paleontologist can evaluate the discovery and provide recommendations. EBMUD will provide the construction contractor with the paleontologist contact information prior to initiation of construction activities.

Implementation of Mitigation Measure CULT-2 would reduce impacts on paleontological or other unique geologic features to less than significant.

Vd. Less than Significant with Mitigation Incorporated. A sacred lands search for the project completed by the Native American Heritage Commission did not identify any Native American cultural resources in the project vicinity (Native American Heritage Commission 2009). Similarly, the record searches for the project did not identify any human remains or the potential to identify human remains in the project area. Regardless, there is the possibility of encountering human remains either in association with prehistoric occupation sites or otherwise during ground-disturbing construction activities. Therefore, mitigation measures would be required to reduce this impact to a less-than-significant level.

Mitigation Measure CULT-3: If human remains are discovered during construction, the contractor will stop all work in the vicinity and immediately contact the County Coroner according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. In addition, a qualified forensic archaeologist will be contacted immediately to evaluate the discovery. If the remains are determined to be Native American, the coroner will notify the Native American Heritage Commission, and the procedures outlined in the California Code of Regulations Section 15064.5(d) and (e) will be followed.

Implementation of Mitigation Measure CULT-3 would reduce impacts on human remains to less than significant.

VI. GEOLOGY AND SOILS **Would the project:**	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving?				X

VI. GEOLOGY AND SOILS **Would the project:**	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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?				X
ii) Strong seismic ground shaking?				X
iii) Seismic-related ground failure, including liquefaction?				X
iv) Landslides?				X
b) Would the project result in substantial soil erosion or the loss of topsoil?			X	
c) Is the project located on strata or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				X
d) Is the project located on expansive soil creating substantial risks to life or property?				X
e) Where sewers are not available for the disposal of wastewater, is the soil capable of supporting the use of septic tanks or alternative wastewater disposal systems?				X

DISCUSSION

VIa. (I to IV). No Impact. The nearest fault is the Coast Range-Central Valley Blind Thrust near Bixler approximately 0.6 mile from Indian Slough. Therefore, the project site does not cross known fault lines. The project proposes no activities that would expose people or structures to rupture of a known fault, strong seismic ground shaking, seismic related ground failure, or landslides.

VIb. Less Than Significant Impact. Although the project proposes some ground-disturbing activities, these activities are minimal and would result in little soil erosion or loss of top soil because the contractor would use BMPs to minimize soil erosion and loss of top soil (see Section IXa).

VIc. No Impact. The project proposes no activities that would result in landslide, lateral spreading, subsidence, liquefaction, or collapse.

VId. No Impact. The Aqueducts were built on Holocence peat, Holocene, and Pleistocence alluvium which are not considered expansive. Therefore, the project would have no impacts resulting from expansive soils.

VIe. No Impact. Because septic tanks or alternative wastewater disposal systems are not part of this project, this item is not applicable.

VII. GREENHOUSE GAS EMISSIONS **Would the project:**	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance?		X		
b) Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

DISCUSSION

VIIa. Less than Significant with Mitigation Incorporated. There are no promulgated standards of significance for GHG impacts established under CEQA for construction-only projects. Thus, project emissions are compared against existing GHG inventories for context. Tables 9 and 10 show the national and statewide GHG inventories for fuel combustion.

> **Mitigation Measures AIR-1, AIR-2, AIR-3, and AIR-4:** The mitigation measures from the Air Quality section will also mitigate potential impacts from GHG emissions. Therefore, no additional mitigations are required.

As shown in Table 11, construction emissions that are mitigated by Mitigation Measures AIR-1 through AIR-4 would be approximately 740 short tons (671 metric tonnes) CO_2 equivalents occurring over the course of a year. These emissions would be temporary and would permanently cease upon completion of the project. Compared to national and statewide GHG inventories for fuel combustion (Tables 9 and 10, respectively), mitigated construction emissions would comprise about 0.00001 percent of the national inventory and about 0.0002 percent of the State inventory. Such small percentage contributions are well within the estimation error of emissions inventories, generally plus or minus 10 percent (CARB 2007). Also, per Table 11, there are no applicable GHG thresholds for this type of construction-only project (BAAQMD 2009c).

Further, EBMUD has adopted a diverse energy program, reducing carbon dioxide emissions from 70,000 metric tons per year in 2003 to 53,000 metric tons in 2009. EBMUD also produces and uses green energy. For example, EBMUD produces and sells green hydropower from the Pardee and Camanche Reservoirs. EBMUD transports water from the Sierra Nevada to the East Bay by gravity flow rather than pump stations. EBMUD converts methane (biogas) from its wastewater operations into fuel. EBMUD has purchased hybrid vehicles, reducing automobile CO_2 emissions by 92 percent and is experimenting with using bio-diesel fuel. EBMUD is also installing solar energy systems and efficient heating and cooling systems (EBMUD 2010b). Given these offsets and increases in fuel efficiency, the impact of this short-term project's GHG emissions on the environment would be less than significant.

TABLE 9
ESTIMATED U.S. GHG EMISSIONS FROM FUEL COMBUSTION

	CO_2 Equivalents	
Summary Year	**million tonnes**	**million tons**
2000	5,639	6,216
2001	5,567	6,137
2002	5,605	6,179
2003	5,671	6,251
2004	5,733	6,319
2005	5,784	6,376
2006	5,692	6,274
2007	5,790	6,382

Source: USEPA 2009b
Note: 1 short ton = 1.1023 metric tonne

TABLE 10
ESTIMATED CALIFORNIA GHG EMISSIONS FROM FUEL COMBUSTION

	CO_2 Equivalents	
Summary Year	**million tonnes**	**million tons**
2000	402	443
2001	414	456
2002	410	452
2003	409	451
2004	421	464
2005	412	454
2006	414	456
2007	418	461

Source: CARB 2009c (2007 value extrapolated)
Note: 1 short ton = 1.1023 metric tonne

TABLE 11
ESTIMATED MAXIMUM CONSTRUCTION GHG EMISSIONS – PROJECT

(Mitigated)

Greenhouse Gas Emissions	**Peak lbs/day**	**Total tons**	**Threshold tons**	**Significant Yes/No**
Carbon Dioxide (GHG - CO_2)	7,236	730	n/a	n/a
Methane (GHG - CH_4)	0.6	0.06	n/a	n/a
Nitrous Oxide (GHG - N_2O)	0.3	0.03	n/a	n/a
Carbon Dioxide Equivalents (CO_2 eqv)	7,333	740	n/a	n/a

Sources: SCAQMD 2008, USEPA 2009a

Due to its small temporary scale and GHG mitigations, the project would not individually effect the environment or impede the state's ability to meet its 2020 GHG emission reduction goal.

Implementation of Mitigation Measures AIR-1, AIR-2, AIR-3, and AIR-4 would reduce impacts from GHG to less than significant levels.

VIIb. Less than Significant Impact. On a local and statewide basis, agencies in California are in the process of implementing identified strategies to reduce GHG emissions. Table 12 identifies strategies included in BAAQMD's 2009 CEQA Draft Air Quality Guidelines, SJVAPCD's 2009 Draft Addressing GHG Emissions Impacts Under CEQA, and the California Energy Commision's 2009 Draft Climate Action Team Report to the Governor and Legislature that would apply to the project. As shown below, the project would maintain consistency with the applicable GHG emission reduction strategies identified by the California Climate Action Team, BAAQMD, and SJVAPCD.

TABLE 12

CONSISTENCY OF PROJECT WITH APPLICABLE STATE AND LOCAL CLIMATE CHANGE EMISSION REDUCTION STRATEGIES

Responsible Agency	Strategy	Consistency
Bay Area Air Quality Management District	GHG Mitigation Measures Recommended in Proposed (Draft) CEQA Guidelines.	**Consistent:** Notwithstanding temporary status, GHG emissions from the project would fall below the proposed 1,100 metric tonne threshold.
San Joaquin Valley Air Pollution Control District	Addressing GHG Emissions Impacts	**Consistent:** The project is neither a stationary source nor a development and thus does not fall under the applicability criteria.
Department of Water Resources	Water Use Efficiency	**Consistent:** The project would indirectly aid in water conservation by preventing aqueduct corrosion which reduces the risk of leakage or failure.

Sources: BAAQMD 2009c, SJVAPCD 2009, CEC 2009

Due to its small scale and temporary status, the project would not conflict with local plans, policies or regulations aimed at curbing emissions of GHGs. Therefore, the individual impact would be less than significant and no mitigation measures are required.

VIII. HAZARDS AND HAZARDOUS MATERIALS **Would the project:**	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?			X	
c) Reasonably be anticipated to emit hazardous emissions or handle hazardous or acutely hazardous				X

VIII. HAZARDS AND HAZARDOUS MATERIALS **Would the project:**	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
materials, substances, or waste within one-quarter mile of an existing or proposed school?				
d) Is the project located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and as a result, would it create a significant hazard to the public or the environment?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
h) Expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X

DISCUSSION

VIIIa. Less than Significant Impact. Construction activities would require the use of hazardous materials such as lead-based paint; and workers could be exposed to these hazardous materials during construction. However, EBMUD would implement California Occupational Safety and Health Administration (Cal/OSHA) regulations. Improper transport, use, storage, or disposal of hazardous substances could potentially result in the accidental release of substances during construction. The transport, use, storage, and disposal of hazardous substances are governed by federal, state, and local regulations.

Storage and use of hazardous materials is regulated by the California Health and Safety Code. The Contra Costa County and San Joaquin County Environmental Health Departments require submittal of a Hazardous Materials Business Plan for businesses that store, handle, or dispose of such materials in accordance with state regulations. Also hazard communication training is required for employees to ensure safe use, storage, and disposal of materials. The Contra Costa County and San Joaquin County communications and emergency response agencies provide emergency services in the event of a hazardous materials spill that could affect public safety or the environment.

All hazardous wastes generated by the construction contractor would be handled in compliance with applicable federal, state, and local laws and regulations. However, after construction is complete, the pipes would not produce substantial quantities of hazardous wastes. Any waste associated with the project would be handled in accordance with applicable federal, state, and local regulations. These laws require licensing, training of personnel, accumulation limits and times, and reporting and record keeping.

Adherence to existing laws and regulations controlling the transport and use of hazardous materials would reduce the risk of accidental hazardous materials releases. Compliance with federal, state, and local hazardous material regulations would reduce the potential for hazardous materials release to less than significant.

The contractor would submit all appropriate permits, plans, and notifications regarding the storage, transport, use, and disposal of hazardous materials to EBMUD. All plans would be reviewed and approved by the counties prior to construction. The contractor would also be required to notify EBMUD and appropriate agencies of any fires, explosions, hazardous spills, or other conditions that may occur during construction.

Implementation of these plans and regulations would reduce potential impacts associated with the routine transport, use, or disposal of hazardous materials to less than significant, and no mitigation measures would be required.

VIIIb. Less than Significant Impact. All paint removal activities would occur within a sealed containment structure to ensure that materials are not released into the environment. However, exposure to hazardous materials could occur due to improper handling or use of hazardous materials or hazardous wastes during the project, particularly by untrained personnel; transportation accidents; environmentally unsound disposal methods; or fire, or other emergencies.

Construction workers could be exposed to hazards associated with accidental releases of hazardous materials, which could result in adverse health effects. In addition to human contact, improper removal of the lead-based paint could result in accidental releases that could contaminate the surrounding waterways and/or the soil. Hazardous materials regulations, which are codified in Titles 8, 22, and 26 of the CCR, were established at the State level to ensure compliance with federal regulations to reduce the risk to human health and the environment from the use of hazardous substances. These regulations must be implemented by the contractor as appropriate, and are monitored by the State (e.g., OSHA in the workplace or Department of Toxic Substances Control for hazardous waste) and/or local jurisdictions.

Various state and federal regulations and guidelines pertaining to removal of lead-based paint have been adopted for construction activities. These requirements include lead exposure guidelines provided by the U.S. Department of Housing and Urban Development (HUD). In California, lead-based paint removal must be performed and monitored by contractors with appropriate certifications from the State Department of Health Services. In addition, Cal/OSHA has regulations concerning the use of hazardous materials, including requirements for safety training, availability of safety equipment, hazardous materials exposure warnings, and emergency action and fire prevention plan preparation. All construction activities that could result in the release of lead must be conducted according to Cal/OSHA standards.

The rules and regulations noted above would be followed during construction activities. Compliance with these regulations would ensure that construction workers and the environment would not be exposed to any unusual or excessive risks related to hazardous materials during

construction activities. As such, impacts from accidental release of hazardous material into the environment would be less than significant and no mitigation measures would be required.

VIIIc. No Impact. There is no existing or proposed school within one-quarter mile of any project site.

VIIId. No Impact. The project sites are not listed on a hazardous materials site list pursuant to Government Code Section 65962.5.

VIIIe. & f. No Impact. The project sites are not located within an airport land-use plan, or within two miles of a public airport, public use airport, or private airstrip.

VIIIg. Less than Significant Impact. The proposed project would repaint an existing pipeline located adjacent to agricultural lands. Construction activities would increase traffic on local roadways surrounding each of the slough crossings. However, construction-related impacts on the street systems would be less than significant with adherence to standard practices for traffic control, including the project-specific design features listed in Section XV, Transportation/Traffic. Upon completion, the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. As such, this impact would be less than significant.

VIIIh. No Impact. Not applicable. The proposed project would occur in agricultural lands. No wildlands with residences susceptible to fires are located near the project sites.

IX. HYDROLOGY AND WATER QUALITY **Would the project:**	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Violate Regional Water Quality Control Board water quality standards or waste discharge requirements?			X	
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?				X
c) Substantially after the existing drainage pattern of the site area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation onsite or offsite?			X	
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner			X	

IX. HYDROLOGY AND WATER QUALITY **Would the project:**	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
which would result in flooding onsite or offsite?				
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems to control?				X
f) Otherwise substantially degrade water quality?		X		
g) Place housing within a 100-year flood plain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h) Place within a 100-year flood plain structures which would impede or redirect flood flows?				X
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
j) Inundation by seiche, tsunami, or mudflow?				X

DISCUSSION

IXa. Less than Significant Impact. Stormwater runoff from recoating activities could increase risk of erosion and sediment transport and degradation of surface water quality in local waterways. The project would include limited sediment removal and grading on level topography underlain by unconsolidated Quaternary sediments. In addition, the proposed project would remove some vegetation and trees (Trapper Slough and Holt Bend) and expose soil (Black Slough and Holt Bend) to an increased risk of erosion and sedimentation. Sediment runoff into water bodies could result in the degradation of water quality (e.g., increased turbidity) or sedimentation within streams or water supply channels (e.g., reduction in flow capacity or damage to irrigation facilities such as pumps). Additionally, inadvertent releases of hazardous materials used during construction could result in water quality degradation (releases of such as lead-based paint). Three main sources of potential impacts on stormwater runoff from the project are:

- Project construction and abatement processing of the lead-based paint, resulting in accidental release of hazardous materials.
- Disturbed native soils and stockpiles and removed sediment could erode and cause sedimentation in nearby waterways as stormwater runoff.
- Equipment operation and maintenance could cause releases of petroleum products and sediments to the ground, which would run off during precipitation.

Implementation of the SWPPP, water pollution control drawings, and erosion control plan would reduce impacts on violations of water quality standards set forth by the Central Valley and the San Francisco Bay RWQCB to less than significant. These plans would identify on-site pollutant sources and implement BMPs to address erosion control, tracking control, sedimentation control, wind erosion control, non-stormwater control; waste management and materials pollution control,

and protection of natural waterways and municipal storm drains. Therefore, the impact would be less than significant and no mitigation measures would be required.

IXb. No Impact. The proposed project does not include groundwater pumping or recharge wells and does not alter the permeability of the ground surface at the crossing sites.

IXc. Less than Significant Impact. The project would not permanently alter the existing drainage patterns, in any way, that would lead to erosion or siltation on- or off-site. As described previously, the project involves removing existing corrosion protection coatings from the Aqueducts and recoating them. Phase 8 of the project focuses on those segments over water; i.e., the delta sloughs. Certain segments of the project would require dewatering under the Aqueducts to gain sufficient clearance for recoating. Water-fill dams would temporarily exclude water from the construction zone.

With the exception of temporary construction related affects, such as clearing, staging, and storage areas; the project would not permanently alter the existing landscape, or more specifically would not alter the drainage patterns. In turn, the project would also not result in significant erosion or siltation on- or off-site. There would be limited grading, no new impervious surfaces, or increases in runoff coefficients typically associated with altered drainage patterns and the resulting erosion/siltation.

The project would however temporarily alter the flow in areas where dewatering is required, specifically:

- **Black Slough:** The construction contractor would build a temporary water barrier just north and south of the Aqueducts and dewater the area to provide construction clearance. Depending on irrigation return flow quantities, a pump around system could be required to move water past the project area.
- **Holt Bend**: The construction contractor would build a temporary water barrier just west of the project area to provide construction clearance and allow dewatering and sediment removal under the BNSF Railroad crossing. Two agricultural irrigation pumps are just upstream from the project area. A pump around system would be required to move water past the project area and/or supply irrigation flows.
- **Trapper Slough**: Depending on site conditions and the ability to use pile caps to support the containment structures, dewatering could be required. If needed, the project would dewater Trapper Slough in sections such that no area would be dewatered for more than 8 weeks.
- **Indian Slough**: The project would not dewater Indian Slough.

The project would not permanently change the existing drainage patterns of any slough or creek channels. Traditional construction site erosion and sedimentation control measures would be developed by preparing erosion control plans and a SWPPP with BMPs for construction activities. Bare soil areas would be reseeded after completion of the project if the soil was covered prior to the project and the soil was made bare because of project activities. Temporary impacts from construction activities would be addressed through implementation of stormwater BMP as defined by the SWPPP.

Therefore, any potential impacts on existing drainage would be temporary, and would not result in substantial erosion or siltation on- or off-site with implementation of the BMPs recommended in

the SWPPP. Therefore, drainage and erosion impacts would be less than significant and no mitigation measures would be required.

IXd. Less than Significant Impact. The project would not alter the existing drainage patterns in a manner that would result in flooding onsite or offsite. As described above, the project involves removing existing corrosion protection coatings from the Aqueducts and recoating them. Phase 8 of the project focuses on those segments over water (i.e., the Delta sloughs). Certain segments of the project would require dewatering under the Aqueducts in order to gain enough clearance for recoating. These dewatered areas would temporarily exclude water from within the construction zone using temporary water barriers. However, the project would not alter the existing drainage pattern of any of the four crossing sites or the project area.

With the exception of temporary construction related affects, such as clearing staging and storage areas; the project would not alter the existing landscape or more specifically would not alter drainage patterns. In turn, the project would not cause flooding onsite or offsite. There would be no grading, new impervious surfaces, or increases in runoff coefficients typically associated with altered drainage patterns that result in flooding. Moreover, the receiving water bodies are Delta sloughs, which are hydraulically connected to a large flat watershed with the capacity to absorb local flooding. Further, the proposed recoating would be completed in the summer when the sloughs are not subject to storm flows and water is at a premium.

Project construction would require localized dewatering of the sloughs. The extracted water would be returned to the slough. However, dewatering would not change drainage patterns or alter the course of the slough. In addition, project construction would require a staging area and access for construction equipment and vehicles. These could result in a temporary alteration to the existing pervious surfaces at the project site. The contractor would implement standard BMP to ensure no change in peak surface runoff rates. Existing grades would not be altered, thus, no impacts on flooding due to increased runoff would result from project activities.

Traditional construction site stormwater control measures would be developed by preparing erosion control plans and a SWPPP with BMP for construction activities. The SWPPP would address the rate of runoff to the adjacent slough. The project would result in less than significant impacts from on- or off-site flooding and no mitigation measures would be required.

IXe. No Impact. The proposed project does not include the construction of any new structures or any permanent changes to the ground surface (e.g., no paving).

IXf. Less than Significant with Mitigation Incorporated. During construction, the project could accidentally release abrasive materials and lead-based paint into the waterways. Impacts on water quality from these releases would be significant; therefore, the following mitigation measure is required to reduce this impact.

Mitigation Measure WQ-1: Water Quality BMP

- The contractor will ensure that abrasive blasting and painting activities occur within a sealed containment structure so that materials are not released into the environment.
- The contractor will ensure that the pipe segments being abated are fully contained and equipped with high efficiency particulate air filtered local exhaust, which prevents the spread of lead dust, paint chips, and debris. The contractor will ensure

that the lead controlled area is isolated by physical boundaries to prevent unauthorized entry.

- The contractor will ensure that the work area is kept free from paint chip and dust accumulation. The contractor will ensure that the spread of dust and debris is restricted and waste is kept from being distributed over the work area.
- The contractor will ensure that dry sweep and compressed air are not used as cleaning methods of lead dust, paint chips, and debris.
- At the end of each shift and at job completion, the contractor will ensure that the work areas are kept free from visible lead-based paint contamination by using a high efficiency particulate air filtered vacuum cleaner and wet mopping.
- The contractor will develop and implement an SWPPP.
- The contractor will comply with federal, state, and local laws and regulations that control the use of hazardous materials.
- The contractor will ensure that appropriate BMPs, as reviewed by EBMUD, are implemented to reduce any potential impacts on water quality during construction.

Implementation of Mitigation Measure WQ-1 would reduce the impact on water quality to a less than significant level.

I**Xg and h. No Impact**. The proposed project would repaint existing pipelines and would not place any new structures.

IXi. No Impact. The proposed project would repaint existing pipelines and help to maintain the structural integrity of the water conveying pipelines. The project would decrease the potential of local flooding from pipeline failure due to corrosion.

IXj. No Impact. The proposed project would repaint existing pipelines and would not alter the risk of inundation by seiche, tsunami, or mudflow.

X. LAND USE AND PLANNING **Would the project:**	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Physically divide an established community?				X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				X
c) Conflict with any applicable habitat conservation plan or natural communities conservation plan?				X

DISCUSSION

Xa through c. No Impact. The General Plan designation of the Mokelumne Aqueduct right-of-way within San Joaquin County is General Agriculture, with zoning of AF-40 (Agricultural with minimum 40-acre parcel size) and AG-80 (Agricultural with minimum 80-acre parcel size). In

Contra Costa County, the General Plan designation is Public/Semi-Public, with zoning of A-3 (Heavy Agricultural) and A-2 (General Agricultural). The proposed project would repaint existing pipelines. As such, no change in land use within the right-of-way or surrounding areas would occur. Therefore, the proposed project would not conflict with established communities, General Plan designations, zoning, or habitat conservation plans.

XI. MINERAL RESOURCES **Would the project:**	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

DISCUSSION

XIa. & b. No Impact. The proposed project would repaint existing pipelines and no new land area would be occupied, affecting the availability of a mineral resource. According to the Contra Costa General Plan, there are no known mineral resources of current or future value within the vicinity of Indian Slough (Contra Costa County 2005). In addition, there are no known resources with the vicinity of the project sites located in San Joaquin County (San Joaquin County 2009a). Therefore, no loss of availability of known mineral resources would result from the implementation of the proposed project.

XII. NOISE **Would the project:**	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?			X	
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		X		
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of				X

XII. NOISE **Would the project:**	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X

DISCUSSION

XIIa. Less than Significant with Mitigation Incorporated. The proposed project would result in construction activities along the pipeline at the slough crossings over portions of a 2 to 3 year period. Construction activity would contribute to increased noise around each of the slough crossings. Construction activities would include the use of generators, compressors, and abrasive blasting equipment. Although the project area is dominated by agricultural land uses, several residences occur within the vicinity of the slough crossings and could be subjected to elevated noise levels during construction. Tables 2.1 through 2.4 in Chapter 2, Project Description, list the equipment that would likely be used at each project site. Table 13 below shows the noise generated by typical construction equipment.

Contra Costa County Noise Element Policy 11-8 specifies that construction should be concentrated during the hours of the day that are not noise-sensitive for adjacent land uses and should be commissioned to occur during normal work hours of the day to provide relative quiet during the more sensitive evening and early morning periods (Contra Costa County 2005). Exemptions contained in Part 9-1025.9 exempt construction noise from the transportation and stationary noise source standards contained within this part of the County Code, as long as construction activities do not take place before 6:00 a.m. or after 9:00 p.m. on any day (San Joaquin County 2009b).

Most project construction would occur during daytime hours (6:00 a.m. to 7:00 p.m.) Monday through Friday, which is compliant with the time restrictions specified by Contra Costa and San Joaquin counties. Per EBMUD specifications, work in excess of eight hours per day, on Saturdays, on Sundays, or on EBMUD holidays requires prior consent of the Engineer and is subject to cost of overtime construction inspection.

Contra Costa and San Joaquin counties also specify acceptable noise levels. The Contra Costa County General Plan specifies that noise levels in agricultural areas are normally acceptable up to 75 decibels (dBA) (Equivalent Continuous Noise Level/Leq or CNEL) and conditionally acceptable up to 80 dBA. Noise levels in residential areas are normally acceptable up to 60 dBA and conditionally acceptable up to 70 dBA. In the San Joaquin County General Plan, policies 1a and 1b allow for a maximum of 65 dB for outdoor activities and 45 dB for indoor activities generated from transportation noise. For stationary noise sources, Policies 1c and 1d allow 50 dB hourly Leq (daytime) and 45 dB hourly Leq (nighttime) for outdoor activities, and 70 dB maximum Leq (daytime) and 65 dB maximum Leq (nighttime).

TABLE 13*
CONSTRUCTION EQUIPMENT NOISE LEVELS

Equipment	Noise Level at 50 Feet (dBA)	Equipment	Noise Level at 50 Feet (dBA)
All other equipment > 5 HP	85	Excavator	85
Compressor (air for abrasive blasting)	80	Fork lift	85
Crane (mobile or stationary)	85	Pickup Truck	55
Dozer	85	Pile Driver	95
Dump Truck	84	Pumps	77
Dust collector	NA**	Vacuum Truck	85

Source: FHWA 2006

*Notes: * Table contains average values.*
*** Noise levels not available. However, the levels are not expected to be greater than 95 dbA at 50 feet.*

Construction equipment, including pile drivers and dozers, would be utilized within 200 feet of residential receptors at the Indian Slough, 2,000 feet of residential receptors at the Trapper Slough, 1,400 feet of residential receptors at Holt Bend, and 3,200 feet of residential receptors at Black Slough.

For the purposes of this technical report, a worst-case scenario was used to identify and analyze potential environmental impacts. All of the sites would use roughly the same construction equipment except the pile drivers and water barriers; the equipment is specified per site in Tables 2.1 through 2.4 in Chapter 2, Project Description. Based on the noise levels for typical construction equipment, shown in Table 9, the loudest piece of equipment used at the sites would be the pile driver, at 95 dBA at 50 feet. A pile driver would be used to drive the spuds to anchor the barge at Indian Slough. While a pile driver would only be required for approximately 8 piles and would last for one day, it is assumed that construction equipment at the sites would result in temporary and periodic noise levels of 95 dBA, since it represents the worst-case scenario. During the rest of the construction period, the loudest equipment used would be used on the project sites is a dozer, at 85 dBA at 50 feet.

In addition, abrasive blasting would also be used within fabric containment structures at the sites. The air compressors that would be used for the abrasive blasting would generate noise of 80 dBA at 50 feet. The fabric containment structures would not be expected to noticeably attenuate the noise. However, the noise generated by the air compressors would not be greater than noise levels generated by the pile drivers or the dozers. As such, air compressors used within the fabric containment structures are not considered in this analysis. Water pumps would also likely be used at Trapper Slough, Black Slough, and Holt Bend. At this time it is not known exactly what type of pumps would be used, but the pumps would not generate noise greater than 95 dBA at 50 feet.

Noise from a point source, such as a construction site, attenuates or is reduced by about 6 dBA for every doubling of the distance. The closest receptor to any of the sites is 200 feet from the Indian Slough. Noise at this residential receptor would attenuate to approximately 83 dBA[7], which is above the limits set by Contra Costa County. As such, construction activity associated with the project would result in a potentially significant noise impact on residential receptors and sensitive receptors around the other sites.

[7] Calculation: 95 dBA at 50 feet, attenuated out to 200 feet.

Mitigation Measure NOI-1: EBMUD will incorporate contract specifications requiring that construction activities at all construction observe local policies and ordinances for daytime noise levels to the extent practical as EBMUD per Government Code 53091 is exempt from such ordinances. Measures to reduce noise levels to meet this criterion include the following:

- The construction contractor(s) will limit construction work to daytime hours (between 6:00 a.m. and 7:00 p.m.).
- The construction contractor(s) will limit haul truck trips through residential areas to or from project sites to the hours of 9:00 a.m. until 4:00 p.m., Monday through Friday, to minimize the associated noise impacts to less sensitive time periods. The construction contractor(s) will use best available noise control techniques (including mufflers, intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) for all equipment and trucks as necessary.
- If impact equipment (e.g., pile driver) is used during project construction, the construction contractor(s) will use hydraulically or electrically powered equipment wherever practical to avoid the noise associated with compressed-air exhaust from pneumatically powered tools. However, where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed-air exhaust will be used as practicable. Quieter procedures, such as drilling rather than impact equipment, will be used whenever practical.
- The construction contractor(s) will locate stationary noise sources as far from sensitive receptors as possible. If they must be located near receptors, the construction contractor(s) will use adequate muffling (with enclosures) as practicable. Enclosure opening or venting will face away from sensitive receptors to the extent possible. Enclosures will be designed by a registered engineer regularly involved in noise control analysis and design.
- As practicable, the construction contractor(s) will locate material stockpiles, maintenance/equipment staging, and parking areas as far as possible from residential receptors.

Implementation of Mitigation Measure NOI-1 would ensure that noise levels generated during construction and would ensure that construction would take place in the daylight hours, in compliance with the Contra Costa County noise standard that exempts construction noise. This impact would be reduced to a less-than-significant level.

Once construction is complete, no long-term operational noise sources would be associated with the project because the project would not substantially increase the frequency of minor routine maintenance activities over current conditions. Accordingly, project operation would not result in noise levels in excess of standards.

XIIb. Less than Significant Impact. The proposed project would generate only minor vibrations from temporary construction activities such as abrasive blasting and painting. The minor vibrations would be less than significant considering the type of construction equipment that would be used and the distance to sensitive receptors. The completed project would not change existing vibration levels.

XIIc. No Impact. The proposed project would repaint existing pipelines and would not alter long-term ambient noise levels. Minor routine maintenance activities would require vehicle trips that could contribute to existing traffic noise. However, given existing maintenance of the pipeline, any incremental increase in vehicle trips on area roadways would be less than significant and no

perceptible noise increase would occur. Accordingly, project operation would not result in a substantial permanent increase in ambient noise levels.

XIId. Less than Significant with Mitigation Incorporated. Temporary noise would be generated from project construction activities. Pile drivers, compressors, abrasive blasting, and dozers would create new temporary noise sources around each of the sites. All construction equipment required for the project would be confined to the immediate areas of the crossings and removed upon completion. The estimated durations of construction activities are 12 weeks at Indian Slough, 18 weeks at Trapper Slough, 14 weeks at Holt Bend, and 4 weeks at Black Slough.

As previously stated, construction equipment, including a pile driver, would be utilized within 200 feet of residential receptors at the Indian Slough. Assuming the worst case scenario, the construction equipment would generate noise at approximately 95 dBA at 50 feet. Noise at the closest sensitive residential receptor (200 feet from the Indian Slough) would attenuate to approximately 83 dBA, which is not within the limits set by Contra Costa County (conditionally acceptable up to 70 dBA). As such, the use of construction equipment at the sites could potentially result in substantial temporary increase in ambient noise levels in the project vicinity. However, implementation of Mitigation Measure NOI-1, particularly the requirement to use mufflers, would reduce noise levels generated by the project and would ensure that construction would occur during daylight hours, which would meet the Contra Costa County noise standard that exempts construction noise. As such, the mitigation measure would reduce the impact to a less-than-significant level.

Construction activity would also require haul truck traffic and construction vehicle and equipment traffic (collectively known as truck traffic). The hours for hauling removed sediment and for deliveries would be limited to between 6:00 a.m. and 7:00 p.m., and night and evening truck trips would not normally occur. Thus, truck noise would have little or no contribution to the CNEL during the more sensitive evening and nighttime hours. Haul routes that would be used during construction activities would vary from local residential streets with quiet noise environments to arterials with moderately noisy environments. In most cases, off-hauling of spoils from the slough crossings would require haul trucks to travel to and from the sites along local residential streets to regional freeways.

Construction-related truck volumes would be noticeable on the quiet residential streets, such as Orwood Road and Fallman Road, which generally have an average Leq of 50 to 60 dBA, because even one truck per hour may be noticeable in a quiet noise environment. Peak hourly truck volumes would not be noticeable in areas adjacent to SR 4 (generally average Leq of 70 dBA or more). Residential receptors along truck routes would be subject to noticeable increase in truck traffic noise, which would be a significant impact and mitigation measures would be required.

> **Mitigation Measure NOI-2:** EBMUD and/or the construction contractor(s) will notify all property owners and tenants within 300 feet of the edge of the construction right-of-way at least 2 weeks in advance of construction. Property owners and tenants would be notified by mail and, if necessary, telephone.
>
> **Mitigation Measure NOI-3:** The construction contractor(s) will limit truck operations (e.g., haul trucks) to daytime hours, as described in Mitigation Measure NOI-1.
>
> **Mitigation Measure NOI-4:** EBMUD and/or the construction contractor(s) will designate a contact person for responding to construction-related issues, including noise. The name and phone number of the liaison will be conspicuously posted at construction areas and on

all advanced notifications. This person will take steps to resolve complaints, including periodic noise monitoring, if necessary.

Implementation of Mitigation Measures NOI-2 through NOI-4, along with Mitigation Measure NOI-1, would ensure that project-related noise impacts resulting from construction equipment and haul trucks would be mitigated to a less-than-significant level.

XIIe. No Impact. The proposed project is not located within an airport land use plan or within 2 miles of a public airport.

XIIf. No Impact. The proposed project is not located within the vicinity of a private airstrip.

XIII. POPULATION AND HOUSING **Would the project:**	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

DISCUSSION

XIIIa. No Impact. The proposed project would repaint existing pipelines in the Sacramento-San Joaquin Delta. The proposed project does not include any residential, commercial, or other component that could alter regional or local population characteristics. The proposed project would not change the capacity of the recoated pipelines.

XIIIb & c. No Impact. All construction activities would occur within and adjacent to the existing Mokelumne Aqueduct right-of-way. Temporary construction access, stockpiling, and staging areas would affect only lands in agricultural use. No people or housing would be displaced by the proposed project.

XIV. PUBLIC SERVICES **Would the project:**	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?				X
ii) Police protection?				X
iii) Schools?				X
iv) Parks?				X
v) Other public facilities?				X

DISCUSSION

XIVa (i through v). No Impact. The proposed project would repaint existing pipelines and would not result in the construction of any new structures. The proposed project would not generate additional needs for fire protection, police protection, schools, parks, and other public facilities because it would not induce population or employment growth. Workers at the site are likely to commute from within the region and would likely be part of the existing labor supply; therefore, the project would not stimulate demand for new housing in the area.

XV. RECREATION **Would the project:**	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

DISCUSSION

XVa. No Impact. Discovery Bay and the Orwood Resort are located south of Indian Slough, and both facilities provide boat access to the waterway that flows through the slough crossing. Although part of the channel would be restricted to construction equipment only, Indian Slough would not be closed during construction. As such, the project would not result in significant impacts on recreational boating at Indian Slough. Demand for neighborhood and regional parks or

other recreational facilities around any of the project sites would not be increased by the proposed project, which is a short-term maintenance project. In addition, the Traffic Management Plan includes provisions to reduce conflicts for boaters in Indian Slough (see Traffic Management Plan in Section XVIa, below).

XVb. No Impact. The proposed project does not include recreational facilities or require expansion of recreational facilities.

XVI. TRANSPORTATION / TRAFFIC **Would the project:**	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?			X	
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?			X	
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X
d) Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
e) Result in inadequate emergency access?			X	
f) Result in inadequate parking capacity?				X
g) Conflict with adopted policies supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				X

DISCUSSION:

XVIa. Less than Significant Impact. The proposed project would temporarily increase vehicle trips during construction, but would not generate any long-term vehicle trips. Construction-related vehicle trips would include transportation of construction equipment/supplies, commute of workers, and off-site transport of small quantities of waste materials. Construction would temporarily restrict local boat traffic in the navigable sloughs. Construction activities would be limited to the dry weather months, typically April through September.

Through contract specifications, EBMUD requires its contractor(s) to follow all federal, state and local regulatory requirements related to traffic. EBMUD contract specifications will require preparation and implementation of a Traffic Management Plan by the contractor, which will include the following elements:

Traffic Management Plan

- The contractor will specify work hours for each phase of project construction, the process for notifying residents of construction activity, and the means for people to report construction-related problems.
- Where construction activities require shoulder or lane closures, EBMUD contract specifications will require the contractor to prepare and submit allowable lane requirement charts for every location similar to the example shown in Table 14. EBMUD and Contra Costa or San Joaquin Counties staff will review and approve allowable lane requirements charts. The contractor will provide weekly updates to appropriate agency staff informing of scheduled lane closures and detours, if applicable.
- The contractor will develop a haul route to indicate that the primary roadways to access the site will be SR 4, Byron Highway, and Orwood Road. This routing will be provided to all trucks serving the site during the construction period.
- The contractor will place signage on all appropriate public roadways within the work zone warning motorists of the construction work ahead.
- The contractor will provide designated on-site parking areas to accommodate all construction-related parking demand. Should there not be sufficient space onsite to accommodate all parking demand, EBMUD contract specifications will require the contractor to secure private off-site parking and provide shuttles to bring workers to and from the project site.
- EBMUD contract documents will require that the contractor document road conditions for all routes that will be used by construction vehicles both before and after project construction. Roads found to be damaged by construction vehicles will be repaired to the level at which they existed prior to project construction.
- The contractor will provide notification to all public and private facilities that use Indian Slough with construction dates and safety precautions around construction areas at least 30 days prior to construction through the United States Coast Guard's weekly Local Notices to Mariners.
- The contractor will provide signs and warning markers around construction equipment and restricted regions within Indian Slough. The project's waterway markers will be consistent with United States Coast Guard standards (included in California Boating Law, Title 14, Article 6, Waterway Marking System).

TABLE 14
CHART NO. 1 (EXAMPLE ONLY) — CONVENTIONAL HIGHWAY LANE REQUIREMENTS

County:	Contra Costa			**Route/Direction:**	Northbound Major Street					**PM:**														
Closure Limits:	From 200 feet east of Minor Street to 500 feet west of Side Street																							
From Hour to Hour (24)	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
Mondays through Thursday	1	1	1	S	S					S	S	1	1	1	S	S				S	S	1	1	1
Fridays	1	1	1	S	S					S	S	1	1	1	S	S				S	S	1	1	1
Saturdays	R	R	R	R	R	1	1	1	1	1	1	1	1	1	S	S	S	S	S	S	S	S	S	S
Sundays	R	R	R	S	S	S	S	1	1	1	1	1	1	1	S	S	S	S	S	R	R	R	R	R

Legend: 1= Provide at least one through traffic lane open in direction of travel
R = Provide at least one through traffic lane, not less than 10 feet in width, for use by both directions of travel (Reversing Control)
S = Shoulder closure permitted
blank = Work permitted within project right-of-way where shoulder or lane closure is not required.

Impacts that remain significant with implementation of the Traffic Management Plan would require additional mitigation, which is provided after the analysis.

Indian Slough Crossing - The project would require approximately 29 equipment trips to the site prior to construction and 29 trips approximately 12 weeks later when construction is finished. In addition, the project would result in approximately 40 daily worker vehicle trips and 10 haul truck trips over the course of the construction period at this site. However, given the nature of heavy equipment, the 58 equipment trips and 10 haul truck trips would be roughly equivalent to 116 and 20 vehicle passenger trips, respectively. The addition of 80 daily worker vehicle trips and 10 haul truck trips over the course of the construction period would increase traffic and could affect the capacity of the street system around the Indian Slough; although, the roadway is expected to continue operating at acceptable service levels, which is defined as LOS C or better for this location by Contra Costa County.

Trapper Slough - Construction activities would require approximately 30 equipment vehicle trips prior to the commencement of construction activities and 30 vehicle trips approximately 24 weeks later. At this site, the project would also result in approximately 40 daily worker vehicle trips and 36 haul truck tips over the course of the construction period. However, given the nature of heavy equipment, the 60 equipment trips and 36 haul truck trips would be roughly equivalent to 120 and 72 vehicle passenger trips, respectively. It is assumed that there is currently little traffic on the local roadways around this site due to the relatively remote location of the site. In addition, while SR 4 is a heavily utilized road, the addition of 80 daily worker vehicle trips and 36 haul truck trips over the course of the construction period would not be substantial since it would represent less than 1 percent of the maximum daily traffic volume on that roadway. However, the project would increase traffic and could affect the capacity of the local street system around Trapper Slough.

Holt Bend - Construction would result in approximately 30 equipment vehicle trips at the start of construction and 30 trips approximately 14 weeks later. Construction of the project at this site would also generate approximately 40 daily worker vehicle tips and 32 haul truck trips over the course of the construction period. However, given the nature of heavy equipment, the 60 equipment trips and 32 haul truck trips would be roughly equivalent to 120 and 64 vehicle passenger trips, respectively. It is assumed that there is currently little traffic on the local roadways around the site due to the relatively remote location of the site. In addition, while SR 4 is heavily utilized road, the addition of 80 daily worker vehicle trips and 32 haul truck trips over the course of the construction period would not be substantial since it would represent less than 1 percent of the maximum daily traffic volume on that roadway. However, the project would increase traffic and could affect the capacity of the local street system around Holt Bend.

Black Slough - Construction activities would result in approximately 29 equipment vehicle trips prior to commencement of construction activities and 29 vehicle trips approximately 4 weeks later. In addition, construction at this site would generate approximately 40 daily worker vehicle trips and 40 haul truck trips over the course of the construction period. However, given the nature of heavy equipment, the 58 equipment trips and 40 haul truck trips would be roughly equivalent to 116 and 80 vehicle passenger trips, respectively. It is assumed that there is currently little traffic on the local roadways around the site due to the relatively remote location of the site. The addition of 40 daily worker vehicle trips and 40 haul truck trips over the course of the construction period would increase traffic and could affect the capacity of the street system around Black Slough.

In addition, the Aqueducts are currently patrolled weekly, with the most attention to certain facilities, such as flow controls and pump stations. Following construction, inspection and maintenance vehicles would continue to travel to the slough crossing. However, these vehicles trips would not be more frequent than inspection and maintenance vehicles that currently travel to the sites. As such, the project would not result in long-term or permanent impacts to operating conditions on area roadways. The construction-related impact to the street system would be less than significant with adherence to standard practices for traffic management and no mitigation measures would be required.

XVIb. Less than Significant Impact. The Contra Costa County Growth Management Plan removed the LOS standards for local streets within the county (Contra Costa County Transit Authority 2009). There are no other standards established by the Contra Costa County Transit Authority that would be applicable to the project. San Joaquin County established a LOS standard for local roadways in the County of LOS C. It is assumed that the roadways surrounding the sites operate at LOS A since the roadways that provide access to the proposed staging areas provide local access only, do not carry through traffic, and do not serve major trip generating land uses. In addition, based on field observations, there is generally minimal traffic on these rural roadways, although during peak recreational seasons and agricultural seasons, the roadways experience more usage. Near the sites, SR 4 operates at LOS B in the northbound/eastbound direction and at LOS C in the southbound/westbound direction in the morning peak hour, and at LOS D in the northbound/eastbound direction and at LOS B in the southbound/westbound direction in the afternoon/evening peak hour (San Joaquin County 2009).

The project would result in equipment, haul truck, and worker traffic at each of the sites, causing an increase in traffic that could impact the surrounding roadways. However, the project would adhere to standard practices for traffic control, including the project-specific features described above. As such, the project would result in less-than-significant impacts on the operating LOS of the roadway system surrounding each of the sites and no mitigation measures would be required.

XVIc. No Impact. The proposed project would repaint existing pipelines and would not affect air traffic or air safety.

XVId. Less than Significant Impact. During construction activities, standard practices for traffic control and safety would be employed. The proposed project would not result in any permanent changes to existing traffic design features. Although unlikely, potential impacts on traffic design features would be temporary and less than significant.

XVIe. Less than Significant Impact. The proposed project would not result in any permanent structures affecting emergency access, nor would construction result in the blockage of any public roadways. Emergency access would not be affected because contract specifications (see Traffic Management Plan discussion above) would require the contractor to maintain roadway access at all times. During construction activities, traffic through the navigable slough may be restricted, but since access to nearby land uses through roadways would be maintained, the impact on emergency access would be less than significant and no mitigation measures would be required.

XVIf. No Impact. The proposed project would repaint existing pipelines and would not require any additional long-term parking capacity. Temporary parking capacity needs for construction activities would occur within established construction staging areas. The staging areas would accommodate the temporary parking needs of the construction workers and equipment at each site.

XVIg. No Impact. The proposed project would not result in any permanent residences, permanent employment, or other features that could affect regional transportation. No conflict with adopted alternative transportation plans or policies would occur.

XVII. UTILITIES AND SERVICE SYSTEMS **Would the project:**	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
d) Are sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e) Has the wastewater treatment provider which serves or may serve the project determined that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
f) Is the project served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
g) Comply with federal, state, and local statutes and regulations related to solid waste?				X

DISCUSSION

XVIIa. No Impacts. The proposed project would not significantly affect wastewater treatment levels because any wastewater generated during construction would be transported off-site by a licensed disposal contractor.

XVIIb. No Impacts. The proposed project would not result in the need for new or expanded water or wastewater treatment capacity because drinking water for construction workers would be provided on-site and the only wastewater generated by the project would be generated during temporary construction activities and would be removed by a licensed disposal contractor.

XVIIc. No Impacts. The proposed project would not require the construction of new stormwater drainage facilities because the project proposes no new impervious surfaces or structures that would affect stormwater.

XVIId. No Impacts. The proposed project would not result in the need for additional water supply because the project proposes no uses that require additional water.

XVIIe. No Impacts. The proposed project would not result in the need for additional wastewater treatment capacity because the project would not involve any residential, commercial, or industrial use or any other structures that would produce wastewater.

XVIIf. Less than Significant Impact. The proposed project would result in an estimated 250 tons of lead-based paint debris and spent abrasive requiring disposal. Spent blasting media and all nonpaint waste would be tested by the Toxicity Characteristic Leachate Procedure to determine if the waste exceeds hazardous waste levels of (5.0 ppm lead).

Debris material with Toxicity Characteristic Leachate Procedure results of waste below 5.0 ppm would be disposed of as nonhazardous waste in a nearby landfill, most likely to either a local landfill if uncontaminated or the Keller Canyon Landfill if contaminated but not hazardous waste. Keller Canyon is located in Pittsburg, approximately 14 miles northwest of the Indian Slough site. According to Solid Waste Information System, the Keller Canyon Landfill is a Class II landfill with a permitted throughput of 3,500 tons per day and a remaining permitted capacity of over 63 million cubic yards (California Integrated Waste Management Board [CIWMB] 2009). Debris material that is classified as hazardous waste would be disposed of at the Kettleman Hills Hazardous Waste Facility, which has a remaining capacity of approximately 7.3 million CY (DTSC 2003). Both landfills would have adequate remaining capacity to handle nonhazardous and hazardous waste generated by the project. Therefore, impacts on landfill capacity would be less than significant, and no mitigation measures would be required.

XVIIg. No Impacts. State-mandated solid waste diversion goals are established by the California Integrated Waste Management Act (Assembly Bill [AB 939]), including source reduction, composting, and recycling. AB 939 required all municipalities in the State to divert at least 50 percent of their waste streams by 2000. Senate Bill (SB) 1016, approved in 2008, builds on AB 939 by implementing a simplified and timelier indicator of jurisdiction performance that focuses on reporting disposal at Board-permitted disposal facilities. Starting with the 2007 reporting, the CIWMB will convert each jurisdiction's 50 percent diversion goal into a 50 percent equivalent per capita disposal target. Under AB 939, the objective for each jurisdiction was to be at or above a 50 percent diversion rate. Under SB 1016, the objective is to be below the jurisdiction 50 percent equivalent per capita disposal target. San Joaquin County's new rate is not yet available.

The project would dispose of all demolition debris in accordance with all applicable state and local rules and regulations. No additional solid waste would be generated after the completion of project. Therefore, the project would not conflict with federal, state, and local statutes and regulations related to solid waste.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE **Would the project:**	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to		X		

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE **Would the project:**	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?				
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		X		

DISCUSSION

XVIIIa. Less than Significant with Mitigation Incorporated. By Implementing Mitigation Measures AIR-1 through AIR-4, BIO-1 through BIO-8, CULT-1 through CULT-3, WQ-1, and NOI-1 through NOI-4, the proposed project would have less-than-significant impacts on the environment or wildlife as discussed in previous sections.

XVIIIb. Less than Significant Impact. Construction emissions and fugitive dust generated by the proposed project would contribute to the existing exceedance of air quality standards in the project area. With the implementation of mitigation measures, the project contribution to this cumulative impact would be less than significant.

The project would have potentially significant impacts on wetland and riparian habitat and wildlife that would be reduced to less than significant with mitigations. These impacts, combined with past, present and future projects, such as the 2-Gates Project (Metropolitan Water District) and the Rock Slough Fish Screen (Contra Costa Water District), would result in similar impacts to sensitive species. The cumulative impact would be potentially significant, but the project's contribution to this Delta-wide cumulative impact would be less than cumulatively considerable through implementation of mitigation measures that would fully offset project effects. Other projects would be required to implement similar mitigation measures, further reducing the potential for cumulative impacts.

XVIIIc. Less than Significant with Mitigation Incorporated. No significant unavoidable environmental effects of the proposed project were identified in this environmental analysis. **With the Implementation of Mitigation Measures AIR-1 through AIR-4, BIO-1 through BIO-8, CULT-1 through CULT-3, WQ-1, and NOI-1 through NOI-4**, less than significant impacts would occur to human beings or their environment.

EARLIER ANALYSIS

Earlier analyses may be used where, pursuant to the tiering, a program Environmental Impact Report, or other CEQA process, an effect has been adequately analyzed in an earlier Environmental Impact Report or negative declaration (Section 15063 (c)(3)(D)).

Data from the following documents were used in the development of the above environmental checklist forms:

- Michael Brandman Associates. March 1996. Initial Study and Mitigated Negative Declaration for the Mokelumne Aqueduct Seismic Upgrade Project. Prepared for the East Bay Municipal Utility District, Oakland, California.
- PAR Environmental Services, Inc. August 1996. Cultural Resources Investigation for the Mokelumne Aqueduct Seismic Upgrade Project. Prepared for Michael Brandman Associates, Sacramento, California.

These documents are available for review at the offices of the East Bay Municipal Utility District, 375 11th Street, Oakland, California 94607; Contact Bill E. Maggiore, Senior Engineer at (510) 287-1021.

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APPENDIX A
MITIGATION MONITORING AND REPORTING PROGRAM

ENVIRONMENTAL MITIGATION
RECOAT MOKELUMNE AQUEDUCTS PHASE 8 – SLOUGH CROSSING PROJECT

The requirements for a mitigation monitoring or reporting program (MMRP) are presented in Section 15097 of Title 14, California Code of Regulations, Chapter 3, Guidelines for Implementation of the California Environmental Quality Act (CEQA). It requires the public agency to adopt a program for monitoring or reporting on the revisions that it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects. Reporting or monitoring responsibilities may be delegated to another public agency or private entity. However, until mitigation measures have been completed, the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program.

As the Lead Agency, East Bay Municipal Utility District (EBMUD) will monitor and report on mitigation for the Recoat Mokelumne Aqueducts Phase 8 – Slough Crossings Project (Project). Reporting generally consists of a written compliance review by the Regulatory Compliance Division, based on reports prepared at the end of the Design and Construction Phase, and at defined points during project implementation or upon completion of the mitigation measure. Monitoring is generally an ongoing or periodic process of project oversight, conducted by EBMUD Construction Inspectors during the Project Construction Phase, and by the Asset Management Division during the Maintenance Phase.

The Project's MMRP is comprised of a matrix of impacts and mitigation. For each significant but mitigable impact and mitigation measure, the Mitigated Negative Declaration identifies the implementation action required, the timing requirements for implementation, and EBMUD's work unit responsible for ensuring that the action occurs. For impacts that are less than significant, mitigation is not required by CEQA. Mitigation for impacts to environmental justice, a social concern, is also not required under CEQA.

The attached table presents the MMRP for the Project.

RECOAT MOKELUMNE AQUEDUCTS PHASE 8 – SLOUGH CROSSINGS PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Impact being Mitigated	Timing Requirement	Responsibility for Implementation	Responsibility for Monitoring	Design Phase Check Box	Construction Phase Check Box	Post-Construction Phase Check Box
AIR QUALITY							
Measure AIR-1: Diesel Control Measures. East Bay Municipal Utility District (EBMUD) will incorporate the following measures into the construction contract specifications: ▪ To minimize potential diesel odor impacts on nearby receptors (pursuant to Bay Area Air Quality Management District (BAAQMD) Regulation 1, Rule 301, and San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation IV, Rule 4102, Nuisance), construction equipment will be properly tuned. A schedule of tune-ups will be developed and performed for all equipment operating within the project area. A log of required tune-ups will be maintained and a copy of the log will be submitted to the project Environmental Compliance Officer (ECO) for review every 2,000 service hours. ▪ Fixed temporary sources of air emissions (such as portable pumps, compressors, etc.) will be electrically powered unless the contractor submits documentation and receives approval from ECO that the use of such equipment is not practical, feasible, or available (generally contingent upon power line proximity, capacity, and accessibility). California ultra-low sulfur diesel fuel with maximum sulfur content of 15 parts per million (ppm) by weight, or an approved alternative fuel, will be used for onsite fixed equipment not using line power. ▪ To minimize diesel emission impacts, construction contracts will require off-road compression ignition equipment operators to reduce unnecessary idling with a two (2) minute time limit. ▪ On-road and off-road material hauling vehicles will shut off engines while queuing for loading and unloading for time periods longer than two (2) minutes. ▪ Off-road diesel equipment will be fitted with verified diesel emission control systems (e.g., diesel oxidation catalysts) to the extent reasonably and economically feasible. ▪ Utilize alternative fuel equipment (i.e., compressed or liquefied natural gas, biodiesel, electric) to the extent reasonably and economically feasible.	The Project would have a limited potential to contribute to existing violations of state and federal air quality standards for ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$), primarily through diesel engine exhaust and fugitive dust emissions. No applicable quantitative emissions thresholds, neither daily nor annual, would be exceeded in either BAAQMD or SJVAPCD.	During construction	EBMUD construction contractor	EBMUD Construction Inspectorand Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date_____	Completed by _____ Date_____	Completed by _____ Date_____
Measure AIR-2: Greenhouse Gas Control Measures. During construction, contractors will implement the following measures to reduce greenhouse gas (GHG) emissions from fuel combustion and construction activities: ▪ On-road and off-road vehicle tire pressures will be maintained to manufacturer specifications. Tires will be checked and reinflated at regular intervals. ▪ Lower-carbon fuels such as biodiesel blends will be used where feasible. ▪ Engine retrofits to remove emissions, such as diesel particulate matter filters with diesel oxidation catalysts, will be used where feasible. ▪ Construction equipment engines will be maintained to manufacturer's specifications. ▪ Locally made construction materials will be used to the extent feasible. ▪ Construction debris will be reused to the extent feasible. ▪ Any existing onsite trees and vegetation will be preserved or replaced at a 1:1 ratio in a nearby benign location (if removal is necessary for project activities) as a means of providing carbon sequestration.							

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Measure AIR-3: Basic Dust Control Measures. EBMUD will require its contractor to implement the following controls at the construction and staging sites as applicable. ▪ Water all active construction areas twice daily or as necessary and indicated by soil and air conditions. ▪ Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard. ▪ Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites. ▪ Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets. ▪ All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, will be effectively stabilized to minimize dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative groundcover. ▪ All on-site unpaved roads and off-site unpaved access roads, parking areas, and staging areas will be effectively stabilized for dust emissions using water, aggregate, or chemical stabilizer/suppressant. ▪ All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities will be effectively controlled for fugitive dust emissions utilizing application of water or by presoaking. ▪ When materials are transported off-site, all material will be covered, or effectively wetted to limit visible dust emissions, and at least 2 feet of freeboard space from the top of the container will be maintained. ▪ All operations will limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by wetting. Use of blower devices is expressly forbidden. ▪ Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles will be effectively stabilized for fugitive dust emissions utilizing sufficient water, chemical stabilizer/suppressant, or a cover. ▪ Within urban areas, trackout will be immediately removed when it extends 50 or more feet from the site and at the end of each workday. ▪ Any site with 150 or more vehicle trips per day will prevent carryout and trackout. ▪ On-site, a speed limit of 15 miles per hour will be imposed on truck traffic.							
Measure AIR-4: Diesel Particulate Matter Emissions Control Measures. EBMUD will require the construction contractor to implement the following measures to reduce particulate matter emissions from diesel exhaust: ▪ Grid power will be used instead of diesel generators where feasible to connect to grid power (generally contingent upon power line proximity, capacity, and accessibility). ▪ The project specifications will include 13 California Code of Regulations (CCR) Sections 2480 and 2485, which limit idling of all diesel-fueled commercial vehicles (weighing over 10,000 pounds, both California- or non-California-based trucks) to 30 seconds at a school or 5 minutes at any location. In addition, the use of diesel auxiliary power systems and main engines will be limited to 5 minutes when within 100 feet of homes or schools while the driver is resting. ▪ The project specifications will include 17 CCR Section 93115, Airborne Toxic Control Measure for Stationary Compression Ignition Engines, which specifies fuel and fuel additive requirements and emission standards for operation of any							

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stationary, diesel-fueled, compression-ignition engines. ▪ A schedule of low-emissions tune-ups will be developed and such tune-ups will be performed on all equipment, particularly for haul and delivery trucks; and ▪ Low-sulfur (≤ 15 ppmw S) fuels will be used in all stationary and mobile equipment.							
Measures AIR-1, AIR-2, AIR-3, and AIR-4, as noted above.	The proposed Project would result in a small temporary incremental contribution to a cumulative effect for several criteria pollutants for which the San Francisco Bay Area and San Joaquin Valley Air Basins are in nonattainment under an applicable federal or state ambient air quality standard (i.e., ozone, PM_{10}, and $PM_{2.5}$).				Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
Measures AIR-1, AIR-2, AIR-3, and AIR-4, as noted above.	The proposed Project would not expose sensitive receptors to substantial pollutant concentrations.				Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
Dust Control Plan **Requirements in permits and agreements with public agencies**	Other specifications and contract requirements				Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
BIOLOGICAL RESOURCES							
Measure BIO-1: Protection of Valley Elderberry Bushes Adjacent to Trapper Slough: ▪ Prior to construction, a qualified biologist or botanist will conduct spring elderberry bush surveys to locate known plants and to identify locations of any new plants. ▪ Establish and maintain a 100-foot buffer around any elderberry bush with stems measuring 1 inch or greater at ground level. ▪ Erect fencing and flag areas to be avoided during the project activities. In areas where the United States Fish and Wildlife Service (USFWS) has approved encroachment on the 100-foot buffer, a 20-foot exclusion zone, from the drip line of the plants, will be established. ▪ Field personnel will be briefed on the status of the valley elderberry longhorn beetle (VELB), avoiding damage to the elderberry plants, the reasons to protect the	Disturbances to valley elderberry bushes, habitat to VELB	Prior to and during construction	EBMUD Biologist and construction contractor	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____

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host plant, and the possible penalties for not complying with these requirements. ▪ Post signs every 50 feet along the perimeter of the exclusion zone with the following information: "This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act (ESA) of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." The signs must be clearly visible and legible from a distance of 20 feet and must be maintained for the duration of project. ▪ Supply supplemental water to elderberry bushes in Trapper Slough if negatively affected by dewatering. A botanist or other qualified biologist will determine the need for supplemental watering. If potable water is used for irrigation, the water will be dechlorinated prior to application							
Measure BIO-2: Avoidance, minimization, and mitigation measures for giant garter snake (GGS) EBMUD will implement the following measures including preconstruction surveys, biological monitoring during construction and the implementation of the following protection measures: ▪ Construction personnel will receive USFWS-approved worker environmental awareness training from a USFWS-approved biologist. The training will include a description of the GGS, including natural history and habitat, a review of the state and federal listing of the species, the general protection measures to be implemented to protect the species, and a delineation of the limits of the work areas. Employees will be required to sign documents stating that they understand that take of listed species and destruction or damage of their habitat could be a violation of state and federal law. ▪ Recoating activities will occur between May 1 and October 1 of each year to avoid the GGS estivation period. ▪ Movement of heavy equipment will be confined to existing roadways and the construction work areas defined on project plans to minimize habitat disturbance ▪ Any dewatered habitat will remain dry for at least 15 consecutive days prior to excavations or filling of the dewatered site (USFWS 2010). ▪ Clearing will be confined to the minimum area necessary to facilitate construction activities. GGS habitat adjacent to the project area will be fenced and avoided by construction workers. ▪ 24 hours prior to construction activities, the project area will be surveyed for GGS. Surveys of the project area will be repeated if a lapse in construction activity of two weeks or greater occurs. ▪ If a snake is encountered during construction, activities will cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed. Any sightings and any incidental take will be reported to the USFWS and California Department of Fish and Game (CDFG) immediately. ▪ At the end of construction, terrestrial and wetland habitat disturbed during construction and removal of the gates will be restored to pre-construction conditions. Restoration work may include replanting or seeding with plant species that were removed during construction and removal activities. All exclusion fencing and construction related materials will be removed from the site. ▪ If the species is observed at the construction site at any time during construction, work will cease immediately within 200 feet of the area until the snake leaves the work area on its own and is out of harm's way. USFWS and CDFG will be contacted immediately. ▪ A monitoring report of all activities associated with surveys and mitigation for this species will be submitted to CDFG and USFWS no later than one month after construction is completed.	Disturbances to GGS	Prior to and during construction	EBMUD Biologist and construction contractor	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____

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▪ Not less than 48 hours prior to the start of any construction activities, including the removal of the structures, the USFWS-approved biologist will monitor the installation of exclusionary fencing around the terrestrial portion of the area subject to disturbance. The fencing will contain one-way exits so snakes within the fenced area will be able to escape but not reenter. ▪ Barrier fencing will be installed and maintained along the perimeter of the active project and staging sites. Silt cloth will be used for the fencing material. Installation will be as follows: – The fencing material will be trenched at least 6 inches deep and the soil compacted to prevent animals from passing under the fence. – The fence height will be a minimum of 36 inches above ground, with the stakes on the interior of the fence to minimize snakes using them to cross the fence. – All openings will have a wing on each side that turns back onto the outside of the fence to redirect animals away from the opening. The wing will turn back a minimum of 8 feet, ending parallel and within 1 to 1.5 feet of the fence. – The integrity of the fence will be checked a minimum of twice a week, with at least two days separating each inspection. In addition, the integrity of the fence will be checked after any significant rain event, greater than 1 inch of rain per day. – Repairs to the fence will be completed within 24 hours of the first detection of a fence breach. Site will be re-surveyed immediately after fence has been repaired. – Fence material will remain straight and upright with no sags. Sags may allow animals to cross the fence. No material will be allowed to lean on or cross over the fence. – All vegetation within 2 feet of the outside of the fence will be maintained at a height of 2 inches or less to limit the amount of suitable habitat near the fence. ▪ Habitat features suitable for GGS within the perimeter of the fence will be removed under the direct supervision of the USFWS-approved biologist, and any snake detected will be allowed to leave on its own. The USFWS and CDFG will be notified within 24 hours of any GGS (living or dead) observed during construction. ▪ In order to minimize the effects of loss and disturbance of habitat on GGSs, habitat will be replaced based on the acreage and on the duration of disturbance. Compensation for the loss of upland habitat will include restoration of upland refugia, the acquisition of suitable habitat offsite, and/or the purchase of conservation credits. The acreage of restored and preserved habitat will be determined through consultation with the CDFG and USFWS, taking into account the time of year when construction activities occur and the quality of on-site habitat.							
Measure BIO-3: To avoid impacts on western pond turtle (WPT), EBMUD will ensure that the following measures are implemented: ▪ Before construction, a worker environmental training awareness program will be conducted by a qualified biologist. The training will include instruction regarding species identification, natural history, aquatic and upland nesting habitat, the general conservation measures to be implemented to protect the species, and a delineation of the limits of work. ▪ If juvenile or adult WPTs are found aestivating or hibernating on the project site, construction work will cease within 50 feet of the area and the biologist will move the individuals out of the construction area to suitable habitat prior to resuming construction. If a nest is found in the construction area, CDFG will be notified	Disturbances to WPT	Prior to and during construction	EBMUD Biologist and construction contractor	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date_____	Completed by _____ Date_____	Completed by _____ Date_____

Mitigation Measures	Impact being Mitigated	Timing Requirement	Responsibility for Implementation	Responsibility for Monitoring	Design Phase Check Box	Construction Phase Check Box	Post-Construction Phase Check Box
immediately to determine appropriate measures to protect or relocate the nest. Surveys must be conducted every year in which construction activities occur. ▪ Barrier fencing will be installed and maintained along the perimeter of the active project and staging sites. Silt cloth will be used for the fencing material. Installation will be as follows: – The fencing material will be trenched at least 6 inches deep and the soil compacted to prevent animals from passing under the fence. – The fence height will be a minimum of 36 inches aboveground, with the stakes on the interior of the fence to minimize snakes using them to cross the fence. – All openings will have a wing on each side that turns back onto the outside of the fence to redirect animals away from the opening. The wing will turn back a minimum of 8 feet, ending parallel and within 1 to 1.5 feet of the fence. – The integrity of the fence will be checked a minimum of twice a week, with at least two days separating each inspection. In addition the integrity of the fence will be checked after any significant rain event, greater than 1 inch of rain per day. – Repairs to the fence will be completed within 24 hours of the first detection of a fence breach. – Fence material will remain straight and upright with no sags. Sags may allow animals to cross the fence. No material will be allowed to lean on or cross over the fence. – All vegetation within 2 feet of the outside of the fence will be maintained at a height of 2 inches or less to limit the amount of suitable habitat near the fence A letter report documenting survey methods and findings will be submitted to CDFG following the completion of the preconstruction survey.							
Measure BIO-4: Conduct preconstruction surveys for Swainson's hawk and implement avoidance or protection activities, if present: ▪ Surveys consistent with the Swainson's hawk Technical Advisory Committee's Recommended Survey Methodology (May 31, 2000) will be conducted by a wildlife biologist with knowledge of Swainson's Hawk reproductive behavior within 0.25 mile of site disturbance activities including recoating and staging areas. ▪ If occupied Swainson's hawk nests are detected within 0.25 mile of site disturbance activities, site disturbance will be postponed until a qualified nest monitor determines that the young birds have fledged and are no longer reliant on the nest site. ▪ If site disturbance is proposed within 0.25 mile of an active nest before the young birds have fledged, EBMUD will consult with CDFG to determine the appropriate course of action, which may include nest monitoring by a biologist with stop-work authority in the event of disturbances to nesting behavior, and a reduced no-disturbance buffer if site conditions suggest that a reduced buffer area would not disturb nesting behavior (based on amount and type of ongoing disturbance, such as site preparation).	Disturbances to Swainson's Hawk	Prior to and during construction	EBMUD Biologist and construction contractor	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
Measure BIO-5: For construction during the nesting season (February 1 through August 31), conduct pre-construction surveys for western burrowing owl and, avoidance or mitigation for owls, if present: ▪ EBMUD will conduct surveys and mitigation according to The California Burrowing Owl Consortium's (CBOC) Burrowing Owl Survey Protocol and Mitigation Guidelines (1993) and the CDFG Staff Report on Burrowing Owl	Disturbances to burrowing owl	Prior to and during construction	EBMUD Biologist and construction contractor	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____

Mitigation Measures	Impact being Mitigated	Timing Requirement	Responsibility for Implementation	Responsibility for Monitoring	Design Phase Check Box	Construction Phase Check Box	Post-Construction Phase Check Box
Mitigation (1995). These documents state that mitigation actions should be carried out from September 1 to January 31. ▪ Surveys consistent with the California Burrowing Owl Survey Protocol and Mitigation Guidelines (CBOC 1993) will be conducted in all construction areas as well as a 500-foot buffer. A survey to determine if suitable burrows (larger than 3.5 inches diameter) are present in all areas of ground disturbance will be conducted. If no burrows suitable for burrowing owls are present in areas of ground disturbance then no other mitigation is necessary. ▪ If suitable burrows are present in the project area then all areas of ground disturbance (including access roads) will be surveyed for occupancy by burrowing owls within 30 days of initial ground disturbance. The California Burrowing Owl Survey Protocol and Mitigation Guidelines (1993) call for up to four surveys on four separate days to determine burrowing owl presence or absence. ▪ No disturbance will occur within 250 feet of occupied burrows during the breeding season (February 1 through August 31). The 250-foot buffer will be clearly demarcated. If burrowing owls are present within 160 feet of construction during the non-breeding season (September 1 through January 31), a site-specific impact avoidance plan will be prepared by a qualified biologist and submitted to CDFG for approval. The avoidance plan will describe passive relocation procedures and maintenance of one-way doors during site disturbance, if applicable, and habitat restoration after the project is completed. Passive relocation procedures will include installation of one-way doors in burrow entrances by a qualified biologist. One-way doors will be left in place not less than 48 hours to ensure that owls have left the burrow prior to excavation of the burrow by the qualified biologist. ▪ If construction activities result in the loss of occupied habitat, mitigation consistent with the CDFG Staff Report on Burrowing Owl Mitigation Guidelines (1995) will be provided by permanently protecting not less than 6.5 acres of suitable habitat per pair or unpaired resident owl at a location acceptable to CDFG. Long-term management and monitoring of protected habitat acceptable to CDFG will be provided. ▪ Before land disturbance, a worker environmental training awareness program will be conducted by a qualified biologist. The training will include instruction regarding species identification, natural history, habitat, and protection needs. If the species is observed at the construction site at any time during construction, construction work will cease within 250 feet of the area until the owl can be moved to a safe location consistent with CDFG regulations. ▪ A monitoring report of all activities associated with surveys and mitigation for this species will be submitted to CDFG within one month after construction. If owls are observed in the project area, monitoring reports will be submitted to CDFG before any action is taken. California Natural Diversity Database reports will be submitted within one month of each observation with a copy to the local CDFG biologist.					Completed by _____ Date_____		
Measure BIO-6: Conduct preconstruction surveys for nesting birds prior to construction activities and implement avoidance or mitigation activities for nesting birds, if present: ▪ A qualified wildlife biologist will conduct a pre-construction survey for nesting migratory passerine birds and nesting raptors no more than two weeks prior to the start of construction, including tree removal, grubbing, pruning, grading. ▪ If nests of either migratory birds or birds of prey are detected on or adjacent to the project sites, a 250-foot no-disturbance buffer will be fenced with orange construction fencing or equivalent. If an active raptor nest is found within 250 feet of the project, a determination will be made by a qualified biologist as to whether or not construction activities might affect the active nest or disrupt reproductive behavior. If it is determined that construction will not affect an active nest or disrupt breeding behavior, construction may proceed without any restriction or	Disturbances to other raptors and migratory nesting birds	Prior to and during construction	EBMUD Biologist and construction contractor	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date_____	Completed by _____ Date_____	Completed by _____ Date_____

Mitigation Measures	Impact being Mitigated	Timing Requirement	Responsibility for Implementation	Responsibility for Monitoring	Design Phase Check Box	Construction Phase Check Box	Post-Construction Phase Check Box
mitigation measure. If it is determined that construction will affect an active raptor nest or disrupt reproductive behavior or rearing of young, then avoidance is the only mitigation available. ▪ The buffer will be observed until August 15 or sooner if the qualified biologist determines that the young are foraging independently or the nest has failed. ▪ If it is determined that construction activities are likely to disrupt raptor breeding, construction activities will remain outside of an appropriate buffer zone until a qualified biologist determines that the subject birds are not nesting or until any juveniles are no longer using the nest as their primary day and night roost. The ultimate size of individual buffers can be adjusted, following a site evaluation by a qualified raptor biologist, based on the species involved, topography, lines of site between the work area and the nest, physical barriers, and the ambient level of human activity (e.g., farming activities, recreation, road traffic). Site evaluations and buffer adjustments will be made in consultation with the local CDFG representative and/or the USFWS Division of Migratory Bird Management. Tree removals or pruning, and construction activities conducted outside of the breeding season (September 1 through January 31) may proceed without restrictions. ▪ The size of the no-disturbance buffer will be determined by a qualified wildlife biologist in consultation with CDFG and the USFWS and will take in to account local site features and pre-existing sources of potential disturbance. If more than 15 days elapses between the survey and site disturbance, the survey will be repeated. ▪ If active nests are found within 100 feet of the project, a determination will be made by a qualified biologist as to whether or not construction activities might impact the active nest or disrupt reproductive behavior. If it is determined that construction will not affect an active nest or disrupt nesting behavior, construction may proceed without any restriction or mitigation measure. If it is determined that construction is likely to have an adverse affect on breeding of a migratory bird, then avoidance is the only mitigation available. ▪ If it is determined that construction activities are likely to disrupt passerine nesting, construction activities will cease within an appropriate buffer zone until a qualified biologist determines that the subject birds are not nesting or until any juveniles are no longer using the nest as their primary day and night roost. The ultimate size of individual buffers can be adjusted, following a site evaluation by a qualified biologist, based on the species involved, topography, lines of site between the work area and the nest, physical barriers, and the ambient level of human activity (e.g., farming activities, road traffic). Site evaluations and buffer adjustments will be made in consultation with the local CDFG representative and/or the USFWS Division of Migratory Bird Management. Construction-related tree removals or pruning and construction activities conducted outside of the breeding season (September 1 through January 31) may proceed without restrictions.							
Measure BIO-7: Conduct preconstruction surveys for rare plants and avoidance or mitigation for rare plants, if present: ▪ Project boundaries will be delineated and flagged prior to construction. All construction activities will be conducted within the delineated project boundaries. ▪ Staging areas and construction access points will be delineated in the field away from special-status plants and all staging will occur within these designated areas. ▪ Rare plant surveys, timed to coincide with the flowering period of target species (spring and summer beginning in 2010) will be conducted by a qualified botanist or biologist to determine if any special-status plant species are present within the project area. ▪ If rare plants are present within the project area, the feasibility of avoidance will be evaluated. Avoidance would include the installation of orange construction fencing (wildlife friendly) around the plants prior to site disturbance and ensuring	Disturbances to rare plants	Prior to and during construction	EBMUD Biologist and construction contractor	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____

Mitigation Measures	Impact being Mitigated	Timing Requirement	Responsibility for Implementation	Responsibility for Monitoring	Design Phase Check Box	Construction Phase Check Box	Post-Construction Phase Check Box
that rare plants are not disturbed during construction. ▪ If surveys timed to coincide with the flowering period for target species cannot be performed for any reason, presence will be assumed. Prior to construction, a thorough search for plants sharing the vegetative characteristics of target species will be made and if present, those plants will be assumed to be sensitive species. Individual plants found will be subject to the measures described below. ▪ If avoidance is not feasible, a mitigation plan approved by CDFG will be developed and implemented, including, but not restricted to the following measures: (1) the number and area of rare plants affected by the project will be measured and documented; (2) affected plant(s) will be transplanted to a suitable nearby area or seed will be collected and sown in a nearby area with similar habitat characteristics (one possible site is the Wildlands Inc. marsh restoration area located on Holland Tract or the in-channel islands protected as sanctuaries by the Delta Wetlands Project); and (3) mitigation plantings will be monitored for survival, plant numbers and area for a period of five years.							
Measure BIO-8: Restoration of temporary impacts on sensitive natural communities (wetlands and riparian areas): ▪ Wetland and riparian surveys will be conducted by a qualified botanist (or biologist) prior to the start of construction at each site to identify vegetated wetlands. ▪ In consultation with the botanist, the construction contractor will place protective fencing (wildlife friendly) around vegetated wetland areas that can be avoided. ▪ The botanist (or biologist) and construction contractor will collaborate regarding placement of the water-fill dams to minimize impacts on freshwater wetlands in the slough channel and allow the required clearance for work platforms. ▪ Staging areas and construction access points will be located in upland areas that minimize disturbances of wetland area and riparian vegetation. ▪ The construction contractor will take appropriate measures to maintain normal downstream flows and minimize flooding to the maximum extent practicable. ▪ Supplemental water will be applied to vegetated wetlands and riparian areas within the dewatered area. A botanist or other qualified biologist will determine the need for supplemental watering. If potable water is used for irrigation, the water will be dechlorinated prior to application. ▪ EBMUD will provide compensation for temporary impacts on freshwater wetlands and riparian vegetation lost during construction that could not be maintained through watering at a 1:1 ratio. EBMUD will prepare a restoration plan outlining the specific methods, monitoring, and success criteria for revegetation. The plan will be submitted to the appropriate regulatory agencies for review and approval. ▪ Impacts on wetlands and riparian areas not preserved by providing supplemental water will be mitigated at a 1:1 ratio by replanting native plant materials to restore freshwater marsh to the site. ▪ Any exposed slopes and stream banks will be stabilized immediately upon completion of construction. ▪ The construction contractor will use a flow dissipation structure or device to protect sensitive vegetation in the adjacent reach of the slough from damage from dewatering flows.	Disturbances to sensitive natural communities (wetlands and riparian areas)	Prior to and during construction	EBMUD Biologist and construction contractor	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
Requirements for Aquatic Resources ▪ Conduct pre-project surveys to determine presence or absence of fish. If fish are observed implement plan to clear and transport fish from the construction area. ▪ Properly screen the pumps during the dewatering process to avoid impingement or entrainment of species present.	Specifications and contract requirements for aquatic resources	Prior to and during construction	EBMUD Biologist and construction contractor	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____	Completed by _____ Date _____	Completed by _____ Date _____

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▪ Provide fish passage at Trapper Slough for non-ESA listed native and sport fish species that may be present within the project site. ▪ Adequately discharge the water from the dewatering process as to not adversely affect water quality (dissolved oxygen, turbidity) within the receiving waters. ▪ Reduced dewatered area to a minimum and avoid impacts to the streambed. ▪ Implement Best Management Practices (BMP) into the project plan to minimize impacts to the surface waters caused by soil erosion. ▪ Adequately service and clean construction vehicles, including waterborne vessels, to prevent the input of fluids, oils, and lubricants on unprotected soil or into the surface waters					Completed by _____ Date_____		
Other Requirements ▪ Storm Water Pollution Prevention Plan (SWPPP) with best management practices ▪ Requirements in permits and agreements with public agencies	Other specifications and contract requirements	Prior to and during construction	EBMUD Biologist and construction contractor	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date_____	Completed by _____ Date_____	Completed by _____ Date_____
CULTURAL RESOURCES							
Measure CULT-1: If archeological resources are discovered or accidentally disturbed during construction, the contractor will stop all work within the immediate vicinity until a qualified archaeologist can evaluate the discovery and provide recommendations. EBMUD will provide the construction contractor with the archaeologist's contact information prior to initiation of construction activities.	Although there are no known archeological resources in the project vicinity, the project has the potential to disturb unknown or undiscovered resources because it includes ground-disturbing activities.	During construction	EBMUD construction contractor and archeologist	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date_____	Completed by _____ Date_____	Completed by _____ Date_____
Measure CULT-2: If paleontological resources are discovered or accidentally disturbed during construction, the contractor will stop all work within the immediate vicinity until a qualified paleontologist can evaluate the discovery and provide recommendations. EBMUD will provide the construction contractor with the paleontologist's contact information prior to initiation of construction activities.	The project has the potential to disturb unknown or undiscovered resources because it includes ground-disturbing activities.	During construction	EBMUD construction contractor and archeologist	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date_____	Completed by _____ Date_____	Completed by _____ Date_____
Measure CULT-3: If human remains are discovered during construction, the contractor will stop all work in the vicinity and immediately contact the County Coroner according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. In addition, a qualified forensic archeologist will be contacted immediately to evaluate the discovery. If the remains are determined to be Native American, the coroner will notify the Native American Heritage Commission, and the procedures outlined in the California Code of Regulations Section 15064.5(d) and (e) will be followed.	There is the possibility of encountering human remains either in association with prehistoric occupation sites or otherwise during ground-disturbing construction activities.	During construction	EBMUD construction contractor and archeologist	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date_____	Completed by _____ Date_____	Completed by _____ Date_____
GREENHOUSE GASES							
Measures AIR-1, AIR-2, AIR-3, and AIR-4: The mitigation measures from the air quality section will also mitigate potential impacts from greenhouse gas emissions. Therefore, no additional mitigations are required.	There are no promulgated standards of significance for GHG impacts established under				Spec # _____	Completed by _____	Completed by _____

Mitigation Measures	Impact being Mitigated	Timing Requirement	Responsibility for Implementation	Responsibility for Monitoring	Design Phase Check Box	Construction Phase Check Box	Post-Construction Phase Check Box
	the California Environmental Quality Act for construction-only projects. Thus, project emissions are compared against existing GHG inventories for context.				Drawing # _____ Completed by _____ Date_____	Date_____	Date_____
HAZARDS AND HAZARDOUS MATERIALS							
▪ Hazardous Materials Business Plan ▪ Requirements in permits and agreements with public agencies	Other specifications and contract requirements				Spec # _____ Drawing # _____ Completed by _____ Date_____	Completed by _____ Date_____	Completed by _____ Date_____
HYDROLOGY/WATER QUALITY							
Measure WQ-1: Water Quality BMPs ▪ The contractor will ensure that abrasive blasting and painting activities occur within a sealed containment structure so that materials are not released into the environment. ▪ The contractor will ensure that the pipe segments being abated are fully contained and equipped with high efficiency particulate air (HEPA) filtered local exhaust, which prevents the spread of lead dust, paint chips, and debris. The contractor will ensure that the lead controlled area is isolated by physical boundaries to prevent unauthorized entry. ▪ The contractor will ensure that the work area is kept free from paint chip and dust accumulation. The contractor will ensure that the spread of dust and debris is restricted and waste is kept from being distributed over the work area. ▪ The contractor will ensure that dry sweep and compressed air are not used as cleaning methods of lead dust, paint chips, and debris. ▪ At the end of each shift and at job completion, the contractor will ensure that the work areas are kept free from visible lead-based paint contamination by using a HEPA filtered vacuum cleaner and wet mopping. ▪ The contractor will ensure that appropriate BMPs, as approved by EBMUD, are implemented to reduce any potential impacts on water quality during construction. ▪ The contractor will develop and implement a Stormwater Pollution Prevention Plan and Erosion Control Plan. ▪ The contractor will comply with federal, state, and local laws and regulations that control the use of hazardous materials.	During construction, the project may accidentally release abrasive materials and lead-based paint into the waterways.	During construction During pre-construction	EBMUD construction contractor EBMUD construction contractor	EBMUD Construction Inspector and Regulatory Compliance EBMUD Regulator Compliance	Spec # _____ Drawing # _____ Completed by _____ Date_____	Completed by _____ Date_____	Completed by _____ Date_____

Mitigation Measures	Impact being Mitigated	Timing Requirement	Responsibility for Implementation	Responsibility for Monitoring	Design Phase Check Box	Construction Phase Check Box	Post-Construction Phase Check Box
NOISE							
Measure NOI-1: EBMUD will incorporate contract specifications requiring that construction activities at all construction observe local policies and ordinances for daytime noise levels to the extent practical as EBMUD, per Government Code 53091, is exempt from such ordinances. Measures to reduce noise levels to meet this criterion include the following: ▪ The construction contractor(s) will limit construction work to daytime hours - between 6:00 a.m. and 7:00 p.m. ▪ The construction contractor(s) will limit haul truck trips through residential areas to or from project sites to the hours of 9:00 a.m. until 4:00 p.m., Monday through Friday, to minimize the associated noise impacts to less sensitive time periods. The construction contractor(s) will use best available noise control techniques (including mufflers, intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) for all equipment and trucks as necessary. ▪ If impact equipment (e.g., pile driver) is used during project construction, the construction contractor(s) will use hydraulically or electrically powered equipment where practical to avoid the noise associated with compressed-air exhaust from pneumatically powered tools. However, where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed-air exhaust will be used as practicable. Quieter procedures, such as drilling rather than impact equipment, will be used when practical. ▪ The construction contractor(s) will locate stationary noise sources as far from sensitive receptors as possible. If they must be located near receptors, the construction contractor(s) will use adequate muffling (with enclosures) as practicable. Enclosure opening or venting will face away from sensitive receptors to the extent possible. Enclosures will be designed by a registered engineer regularly involved in noise control analysis and design. ▪ As practicable, the construction contractor(s) will locate material stockpiles, maintenance/equipment staging, and parking areas as far as possible from residential receptors.	Potential exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies	During construction	EBMUD construction contractor	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
Measure NOI-2: EBMUD and/or the construction contractor(s) will notify all property owners and tenants within 300 feet of the edge of the construction right-of-way at least 2 weeks in advance of construction. Property owners and tenants would be notified by mail and, if necessary, telephone. **Measure NOI-3:** The construction contractor(s) will limit truck operations (e.g., haul trucks) to daytime hours, as described in Mitigation Measure NOI-1. **Measure NOI-4:** EBMUD and/or the construction contractor(s) will designate a contact person for responding to construction-related issues, including noise. The name and phone number of the liaison will be conspicuously posted at construction areas and on all advanced notifications. This person will take steps to resolve complaints, including periodic noise monitoring, if necessary.	Potential temporary or periodic increase in ambient noise levels in the project vicinity.	During construction	EBMUD construction contractor	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____

Mitigation Measures	Impact being Mitigated	Timing Requirement	Responsibility for Implementation	Responsibility for Monitoring	Design Phase Check Box	Construction Phase Check Box	Post-Construction Phase Check Box
TRANSPORTATION/TRAFFIC							
Traffic Management Plan • The contractor will specify work hours for each phase of project construction, the process for notifying residents of construction activity, and the means for people to report construction-related problems. • Where construction activities require shoulder or lane closures, EBMUD contract specifications will require the contractor to prepare and submit allowable lane requirement charts for every location similar to the example shown in Table 14. EBMUD and Contra Costa or San Joaquin Counties staffs will review and approve allowable lane requirements charts. The contractor will provide weekly updates to appropriate agency staff informing of scheduled lane closures and detours, if applicable. • The contractor will develop a haul route to indicate that the primary roadways to access the site will be SR 4, Byron Highway, and Orwood Road. This routing will be provided to all trucks serving the site during the construction period. • The contractor will place signage on all appropriate public roadways within the work zone warning motorists of the construction work ahead. • The contractor will provide designated on-site parking areas to accommodate all construction-related parking demand. Should there be insufficient space onsite to accommodate all parking demand, EBMUD contract specifications will require the contractor to secure private off-site parking and provide shuttles to bring workers to and from the project site. • EBMUD contract documents will require that the contractor document road conditions for all routes that will be used by construction vehicles both before and after project construction. Roads found to be damaged by construction vehicles will be repaired to the level at which they existed prior to project construction. • The contractor will provide notification to all public and private facilities that use Indian Slough with construction dates and safety precautions around construction areas at least 30 days prior to construction through the United States Coast Guard's weekly Local Notices to Mariners. • The contractor will provide signs and warning markers around construction equipment and restricted regions within Indian Slough. The project's waterway markers will be consistent with United States Coast Guard standards (included in California Boating Law, Title 14, Article 6, Waterway Marking System).	Other specifications and contract requirements				Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____