Alternative Intake Project

Draft

Environmental Impact Report/ Environmental Impact Statement

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CONTRA COSTA WATER DISTRICT

Draft
Environmental Impact Report / Environmental Impact Statement
for the
Contra Costa Water District
Alternative Intake Project

This Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) has been prepared by the Contra Costa Water District (CCWD) and the U.S. Department of the Interior, Bureau of Reclamation (Reclamation) in accordance with the requirements of the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA).

The Draft EIR/EIS evaluates the proposed construction and operation of a new drinking water intake for CCWD in the central Delta and several alternatives. The basic project purpose is to protect and improve the quality of water delivered to CCWD's untreated- and treated-water customers. Key objectives of the project purpose are as follows:

- improve delivered water quality, especially during drought periods;
- protect and improve health and/or aesthetic benefits to consumers;
- improve operational flexibility; and
- protect delivered water quality during emergencies.

The Proposed Action (Alternative 1) includes a new, 250 cubic foot per second (cfs) screened water intake and pump station located along the lower third of Victoria Canal on Victoria Island in the central Delta where water quality is typically better than at CCWD's existing intakes. A buried pipeline would extend 12,000–14,000 feet from the new intake across Victoria Island and beneath Old River and tie into CCWD's existing Old River conveyance system on Byron Tract. The Proposed Action would involve adding a new point of diversion to certain existing water rights held by CCWD and by Reclamation. CCWD would not seek to increase its water rights, CVP contract amounts, or permitted Los Vaqueros Reservoir filling rates through this action. The new intake would change the location, timing, and quality of some of CCWD's diversions, but would not increase total diversions.

This Draft EIR/EIS evaluates the potential environmental effects of the Proposed Action (Alternative 1) and four alternatives: the No-Action Alternative; Alternative 2, Indirect Pipeline Route; Alternative 3, Modified Operations Alternative; and Alternative 4, Desalination Alternative. This Draft EIR/EIS evaluates the project's potential direct, indirect, and cumulative environmental effects on the following resources: Delta water resources; Delta fisheries and aquatic resources; earth resources; local hydrology and water quality; terrestrial biological resources; land use; agriculture; transportation and circulation; air quality; noise; utilities and service systems; hazardous materials; visual resources; recreation; cultural resources; paleontological resources; socioeconomic effects, environmental justice, and growth-inducing effects.

The Proposed Action or alternatives would result in significant adverse environmental effects to agricultural resources and air quality, and would result in a beneficial impact with respect to fish losses through entrainment and impingement at existing CCWD Delta intakes.

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Acronyms and Abbreviations

A.T. & S.F.	Atchison Topeka & Santa Fe
ABAG	Association of Bay Area Governments
ACI	American Concrete Institute
ACTM	Airborne Toxics Control Measure
ADT	Average Daily Traffic
af	acre-feet
AIRFA	American Indian Religious Freedom Act
ARB	Air Resources Board
ASIP	Action Specific Implementation Plan
AWWA	American Water Works Association
BAAQMD	Bay Area Air Quality Management District
BACT	best available control technology
BACT	Best Available Control Technology
BART	Bay Area Rapid Transit
BCDC	Bay Conservation and Development Commission
BMP	Best Management Practice
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CAAQS	California ambient air quality standards
Cal-OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CBC	Building Standards Code
CCAA	California Clean Air Act
CCCTA	Central Contra Costa Transit Authority
CCIC	Central California Information Centers
CDF	California Department of Forestry
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Information System
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CHABA	Committee of Hearing, Bio-Acoustics, and Bio-Mechanics
CHP	California Highway Patrol

CHRIS	California Historical Resources Information System
CNDDB	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
COA	Coordinated Operations Agreement
CRHR	California Register of Historic Resources
CWA	Clean Water Act
D/DBPR	Disinfectants and Disinfection Byproducts Rule
dB	decibels
DCC	Delta Cross Channel
DD	doubling of distance
DFG	California Department of Fish and Game
DOC	dissolved organic carbon
DPR	California Department of Parks and Recreation
DTSC	California Department of Toxic Substances Control
E/I	Export/Import
EC	electrical conductivity
EDR	Environmental Data Resources
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FCWCD	Flood Control and Water Conservation District
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIP	Federal Implementation Plan
FMMP	Farmland Mapping and Monitoring Program
FPP	Farmland Protection Program
FPPA	Farmland Protection Policy Act
fps	feet per second
FWSI	Future Water Supply Implementation
GPS	Global Positioning System

Acronyms and Abbreviations

HAP	hazardous air pollutants
HCP/NCCP	Habitat Conservation Plan/Natural Community Conservation Plan
HCPA	Habitat Conservation Plan Association
HI	Hazard Index
HUD	Federal Department of Housing and Urban Development
I	interstate
I-5	Interstate 5
ICBO	International Conference of Building Officials
IS/MND	Initial Study/Mitigated Negative Declaration
JPOD	Joint Point of Diversion
Ldn	day/night noise level
Leq	equivalent noise level
LESA	Land Evaluation and Site Assessment
Lmax	Maximum Noise Level
Lmin	Minimum Noise Level
LRGA	Leland R. Gardner and Associates
LX	Statistical Descriptor
M&I	municipal and industrial
MACT	MACT
MAF	million acre feet
MBTA	Migratory Bird Treaty Act
MDBP Rules	Microbial and Disinfection Byproducts Rules
MEI	Maximally Exposed Individual
MLD	Most Likely Descendent
MOA	memorandum of agreement
mph	miles per hour
MPP	Multi-Purpose Pipeline
MSCS	Multi-Species Conservation Strategy
MUN	municipal and domestic supply
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NCCPA	Natural Communities Conservation Plan Act
NDOI	Net Delta Outflow Index

NEHRP	National Earthquake Hazards Reduction Program
NEHRPA	National Earthquake Hazards Reduction Program Act
NESHAP	national emissions standards for HAPs
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO	nitric oxide
NO_2	Nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWIC	Northwest Information Centers
NWS	Naval Weapons Station
OEHHA	Office of Environmental Health Hazard Assessment
OHWM	ordinary high water mark
OPR	Office of Planning and Research
OSHA	U.S. Department of Labor Occupational Safety & Health Administration
P.L.	Public Law
PM	particulate matter
ppm	parts per million
ppt	parts per thousand
ppv	peak particle velocity
PRC	Public Resources Code
RCRA	Resource Conservation and Recovery Act
RD	Reclamation District
REC	recognized environmental condition
RFTA	Reserve Forces Training Area
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
S.O.T. Co.	Southern Pacific Transportation Company

SDIP	South Delta Improvements Program
SDWA	Safe Drinking Water Act
SEL	Single Event (Impulsive) Noise Level
SFBAB	San Francisco Bay Air Basin
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SJMSCP	San Joaquin Multi-Species Habitat Conservation and Open Space Plan
SJRHR	San Joaquin River Hydrologic Region
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_2	Sulfur dioxide
SRHR	Sacramento River Hydrological Region
SWPPP	Storm Water Pollution Prevention Plan
SWTR	Surface Water Treatment Rule
TAC	toxic air contaminants
TBACT	Toxic Best Available Control Technology
TERPS	Terminal Instrument Procedures
THM	trihalomethanes
TMDL	Total Maximum Daily Load
TPY	tons per year
U.P.	Union Pacific
U.S.C.	United States Code
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USFWS	US Fish and Wildlife Service
USGS	U.S. Geological Survey
VDE	Visible Dust Emissions
WDR	Waste Discharge Requirements
WQCP	Water Quality Control Plan

Executive Summary

Introduction

This Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) has been prepared to evaluate the potential environmental effects of the Alternative Intake Project, which is a drinking water quality improvement project proposed for implementation by the Contra Costa Water District (CCWD). The Draft EIR/EIS has been prepared on behalf of CCWD and the U.S. Department of the Interior, Bureau of Reclamation (Reclamation) in accordance with the requirements of the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). CCWD is the lead agency under CEQA and Reclamation is the lead agency under NEPA. The Draft EIR/EIS provides the public and responsible and trustee agencies with information about the project and the potential direct, indirect, and cumulative environmental effects of the project.

CCWD's mission is to "strategically provide a reliable supply of high-quality water at the lowest cost possible, in an environmentally responsible manner." CCWD obtains its water supply exclusively from the Sacramento-San Joaquin Delta and serves treated and untreated water to approximately 500,000 people in central and eastern Contra Costa County. CCWD's Board of Directors (Board) has adopted water quality objectives in order to keep constituents of major health concern at the lowest levels that are technically feasible and provide its customers with a consistent supply of aesthetically-pleasing, high-quality water.

Water quality in the Delta at CCWD's existing intakes currently does not meet CCWD's Board-adopted water quality objectives for extended periods each year, requiring CCWD to use the higher-quality water stored in Los Vaqueros Reservoir to blend with the directly diverted Delta water to meet CCWD's water quality objectives. Los Vaqueros Reservoir is an off-stream reservoir that CCWD uses to improve water quality by filling when Delta salinity is low and releasing water for blending when Delta salinity is high. However, even with the blending benefits of the Los Vaqueros Reservoir, CCWD expects to not meet its water quality objectives during extended periods of high salinity in the Delta and expects these periods to occur more frequently in the future as statewide demands on the Delta increase. In addition, Federal and State drinking water regulations are becoming more stringent. To ensure that regulatory requirements and its water quality objectives can be met now and in the future, CCWD must take action to improve the quality of both its source and delivered water.

As part of CCWD's comprehensive water quality strategy to protect and improve water quality for its customers, the Proposed Action would enable CCWD to relocate some of its existing diversions to Victoria Canal, a Delta location with higher-quality source water than is currently available at its Old River and Rock Slough intakes. The project area is

shown in Exhibit ES-1. Reclamation is assisting CCWD in this action in a manner and to the extent consistent with the long-term renewal contract for Central Valley Project (CVP) water service between Reclamation and CCWD (Contract No. I75r-3401A-LTR1), water right permits issued to Reclamation for operation of CVP, CVP operational requirements, and Section 103 [f][1][E] of Public Law 108-361.

Project Objectives

The basic project purpose is to protect and improve the quality of water delivered to CCWD's untreated- and treated-water customers. Key objectives of the project purpose are as follows:

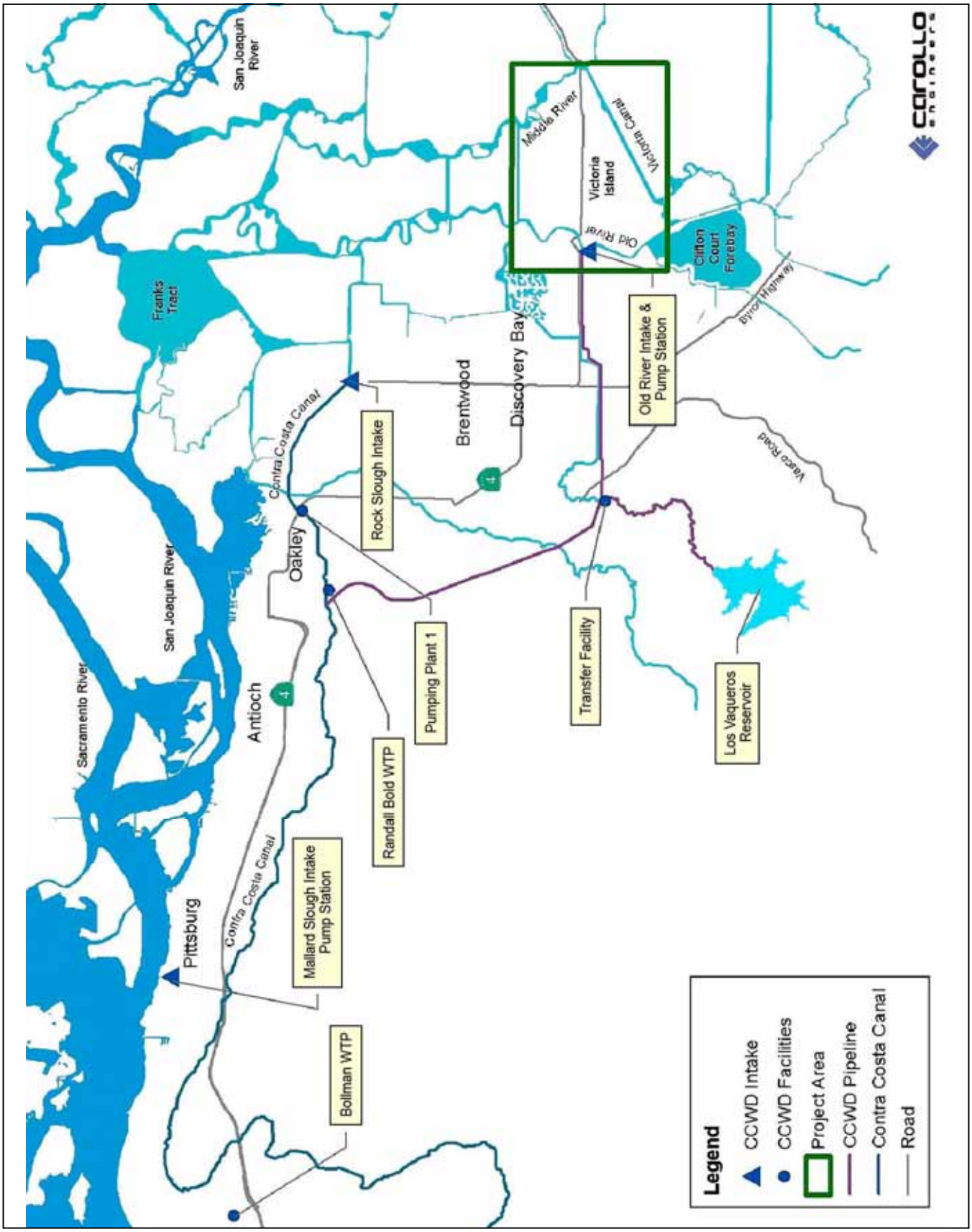
- **Improve Delivered Water Quality, Especially During Drought Periods.** Ensure delivery of high-quality water, particularly in late summer/fall months and during drought periods, when Delta source water quality is typically lowest.
- **Protect and Improve Health and/or Aesthetic Benefits to Consumers.** Enable CCWD to consistently meet or exceed current and future Federal and State drinking water regulations and CCWD objectives to provide high-quality water and protect public health by reducing salinity and disinfection byproducts precursors.
- **Improve Operational Flexibility.** Increase operational flexibility to help deliver high-quality water and maintain the benefits of the Los Vaqueros Project by enabling CCWD to extend the time periods during which Delta water of sufficient quality is available for: 1) filling Los Vaqueros Reservoir, and 2) direct use without the need for blending with higher quality Los Vaqueros Reservoir water to meet delivered water quality goals.
- **Protect Delivered Water Quality During Emergencies.** Help protect CCWD's delivered water quality during emergency situations by enabling CCWD to avoid diverting water from areas of the Delta affected by a levee failure, chemical or hazardous spill, or other potentially catastrophic events.

Purpose and Need

The project purpose is to protect and improve the quality of water delivered to CCWD's untreated- and treated-water customers.

The need for this project derives from the following conditions:

- Delta water quality at CCWD's current intakes does not meet CCWD's Board-adopted water quality objectives during late summer and fall, as well as during drought periods.
- Future and more stringent Federal and State drinking water standards will be increasingly difficult to meet.



Source: Carollo Engineers

Project Location Area for the Proposed Action

EXHIBIT ES-1

- Los Vaqueros Project benefits can be affected by periods of insufficient Delta water quality for reservoir filling or for direct diversion.
- Unforeseen events, such as levee failure, chemical and hazardous spills, and other events can seriously compromise water quality at CCWD's intakes.

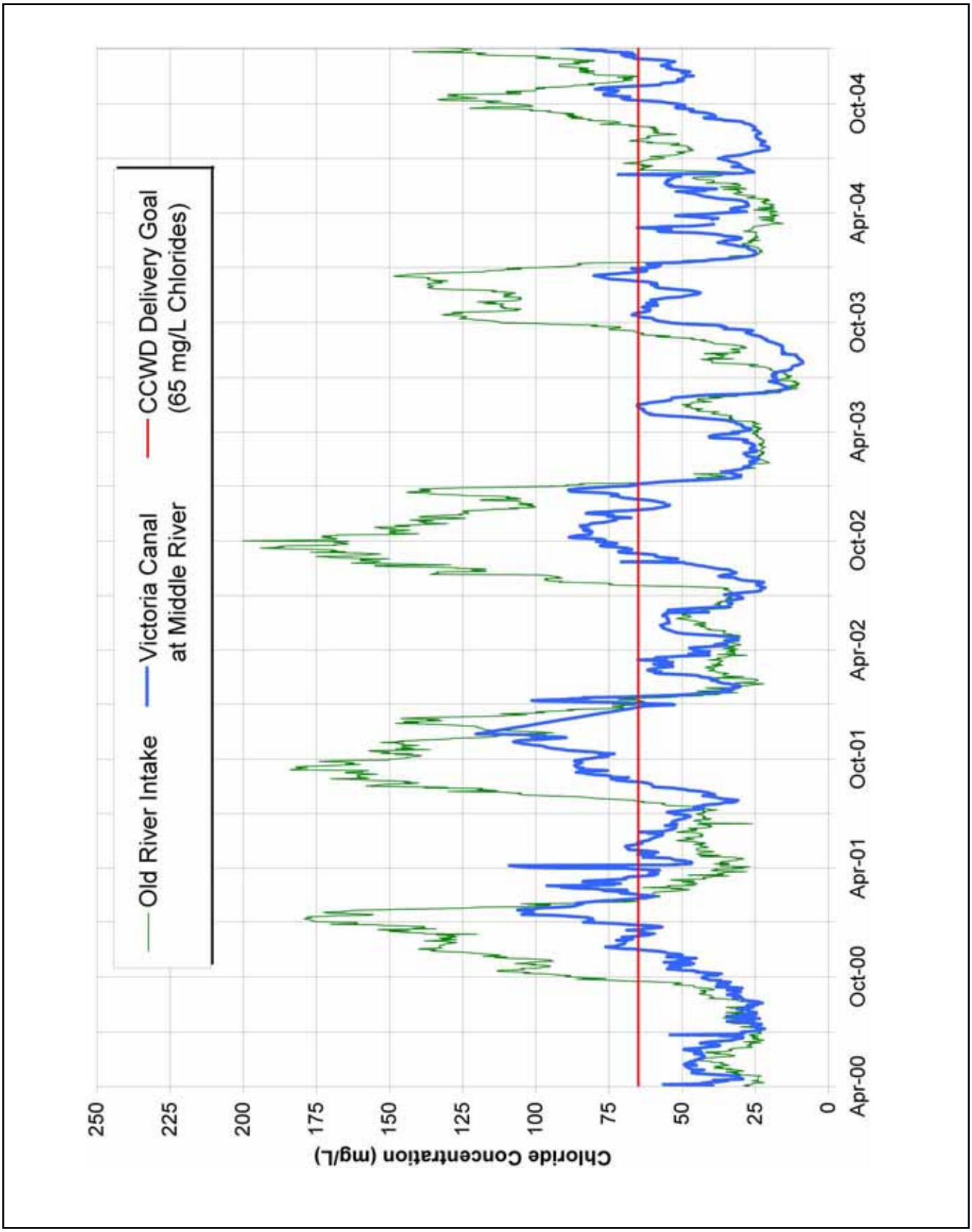
Summary Description of Proposed Action and Alternatives

This document evaluates the potential environmental effects of the Proposed Action and four alternatives: No-Action Alternative; Alternative 2, Indirect Pipeline Route; Alternative 3, Modified Operations Alternative; and Alternative 4, Desalination Alternative.

The **Proposed Action (Alternative 1)** would protect and improve delivered water quality for CCWD customers by enabling CCWD to relocate some of its existing diversions to Victoria Canal, a Delta location with better source water quality than is currently available at its Old River and Rock Slough intakes. Exhibit ES-2 illustrates the better water quality, measured as chlorides, available in Victoria Canal during key periods. While CCWD has water quality goals for several constituents, salinity measured in terms of chloride concentration is generally used as an indicator of overall Delta water quality at CCWD's intakes for both aesthetic and health concerns. The alternative intake would divert up to 250 cubic feet per second (cfs) from a new intake on Victoria Canal. Although it would change the location, timing, and quality of some of CCWD's existing diversions, the Proposed Action would not increase CCWD's total Delta diversion capacity (rate or average annual quantity) and would not change CCWD's demands or the quantity of water delivered to its service area each year; under current conditions, no more than 250 cfs would be diverted from the combined Old River intake and new alternative intake.

The Proposed Action includes a new, screened water intake and pump station located along the lower third of Victoria Canal on Victoria Island in the central Delta, and a buried pipeline that would extend 12,000–14,000 feet from the new intake directly across Victoria Island and beneath Old River and tie into CCWD's existing Old River conveyance system on Byron Tract (see Exhibit ES-3). The Proposed Action would involve adding a new point of diversion to certain existing water rights held by CCWD and by Reclamation. CCWD would not seek to increase its water rights, CVP contract amounts, or permitted Los Vaqueros Reservoir filling rates through this action.

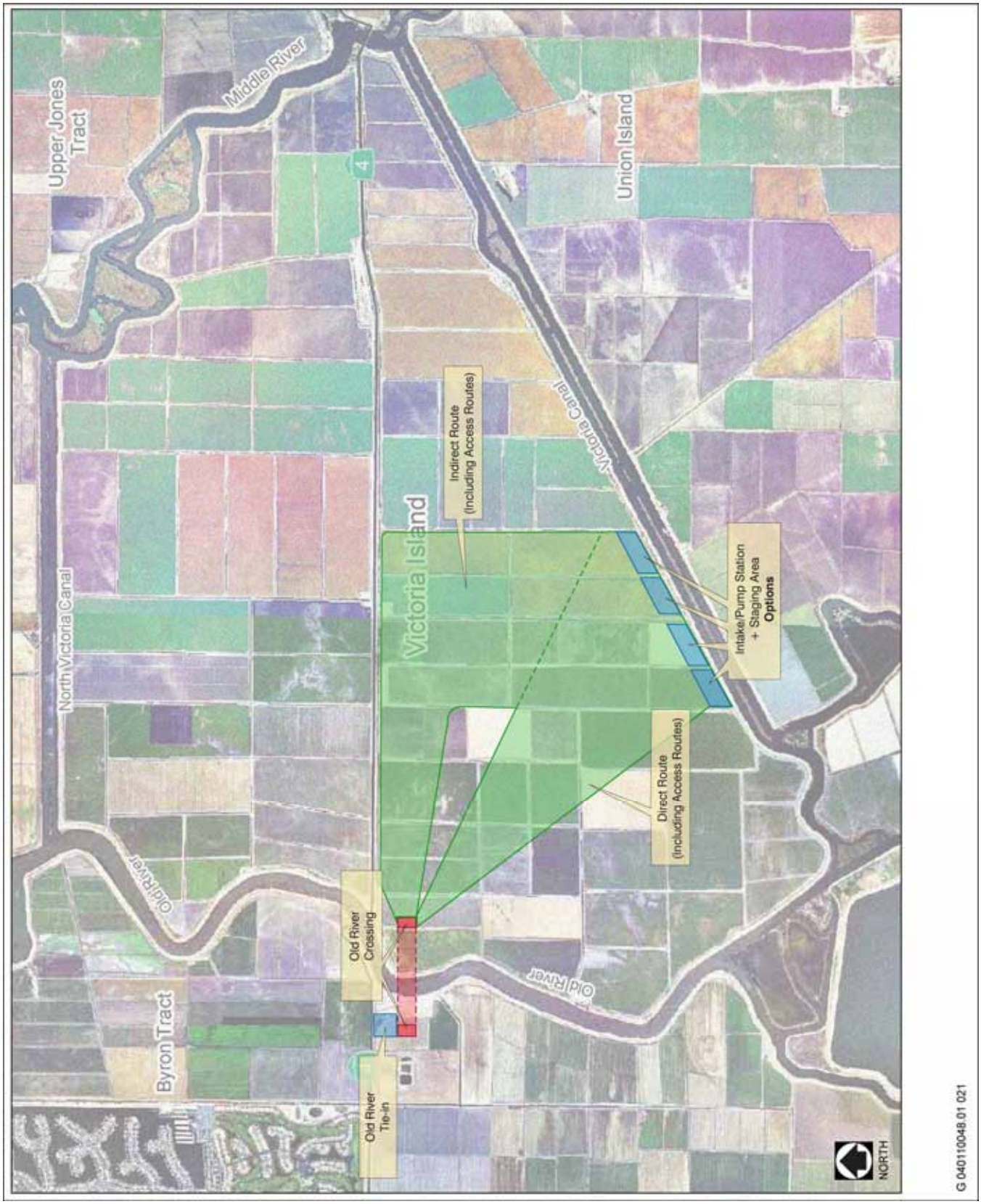
The **No-Action Alternative** would entail CCWD continuing to operate and maintain its existing facilities to provide the highest-quality water available with existing facilities consistent with environmental regulations and permit conditions. In the near term, there would be no substantive or predictable operational changes implemented under the No-Action Alternative. Under future levels of demand, the No-Action Alternative includes the expansion of the Old River pump station to a capacity of 320 cfs consistent with the



Source: CCWD Data

Comparison of Chloride Concentrations at Old River Intake Versus Victoria Canal

EXHIBIT ES-2



Source: CCWD Data

Conceptual Alignments for Alternative1 (Proposed Action) and Alternative 2

EXHIBIT ES-3

CCWD Future Water Supply Implementation EIR (CCWD 1998). The No-Action Alternative also includes three reasonably foreseeable future CCWD projects: the Rock Slough and Old River Water Quality Projects, and a small intertie project with East Bay Municipal Utility District. Operational modeling results indicate that under the No-Action Alternative, CCWD's delivered water quality would decrease in the future. Average salinities in delivered water would increase, and the periods during which CCWD could not meet its water quality objectives would be more frequent and of longer duration.

Alternative 2, Indirect Pipeline Alternative, is the same as the Proposed Action except that the pipeline route from the new intake to the Old River pump station would be indirect, following existing agricultural drainages on Victoria Island. This longer pipeline route could help minimize disruptions to existing agricultural operations on Victoria Island during construction. It is envisioned that the pipeline would extend northward from the proposed intake structure location, parallel to an existing agricultural access road, to State Route 4, then westward and parallel to the south side of the highway to the Old River levee. The alignment would be approximately 17,000–20,000 feet long. CCWD operations would be the same as under the Proposed Action.

Alternative 3, Modified Operations Alternative, would involve modifying CCWD permitted operations to enable CCWD to shift additional pumping from the unscreened Rock Slough intake to the screened intake at Victoria Canal for an increased benefit to Delta fisheries. Delta fisheries, including threatened and endangered species, could benefit because fish mortality is reduced with screened diversions compared to unscreened diversions. Under this alternative, CCWD would apply to change its permits to allow diversion of up to 320 cfs through the Old River conveyance system using the existing 250-cfs Old River intake and the proposed 250-cfs alternative intake in combination. The Rock Slough intake would continue to provide a portion of CCWD supply, but would be used less frequently in the near term than under the Proposed Action. There would be no increase in CCWD's average total annual quantity diverted. The physical features of Alternative 3 would be the same as those of the Proposed Action.

Alternative 4, Desalination Alternative, would protect and improve water quality for both untreated- and treated-water customers by providing high-quality desalinated water to customers served by the Bollman Water Treatment Plant and reducing overall demands on the Contra Costa Canal. The reduced demands on the canal would in turn reduce diversion quantities from the Rock Slough and/or Old River intakes, and would reduce the quantity of blending water required from the Los Vaqueros Reservoir to meet delivered water quality goals. This would allow the Los Vaqueros Project to be used more effectively to provide high-quality water to the remaining untreated- and treated-water customers.

This alternative would include a new brackish water desalination plant with a treatment capacity of approximately 70 million gallons per day and associated infrastructure for conveyance of brackish water to the plant and concentrate disposal from the plant for discharge into Suisun Bay. A new screened intake would be constructed at CCWD's

existing Mallard Slough pump station located near the City of Pittsburg and Suisun Bay. To accommodate the shift of additional CCWD pumping to Mallard Slough and the slight increase in diversions for losses in the desalination process, water rights modifications to the existing Mallard Slough water rights or adding Mallard Slough as a CVP diversion point would be required.

Major Conclusions of the Environmental Analysis

Summary of Impacts and Mitigation Measures

The Proposed Action and alternatives would affect some environmental resources. The majority of the impacts would be temporary, construction-related effects that would be less than significant or would be reduced to less-than-significant levels through mitigation. In addition to the water quality benefits to CCWD, the Proposed Action and several alternatives have the potential to provide environmental benefits to Delta fisheries by reducing net fish entrainment and impingement at CCWD intakes.

Table ES-1, included at the end of this Executive Summary, summarizes the environmental impacts of the Proposed Action and alternatives, the level of significance of each impact before mitigation, recommended mitigation measures, and the level of significance of each impact after mitigation.

The Proposed Action and Alternatives 2 and 3 are very similar in terms of their potential environmental impacts. The primary difference in effect between the Proposed Action and Alternative 2 is the amount of temporarily affected agricultural land along the indirect pipeline alignment during construction and pipeline installation (approximately 200–470 acres with implementation of the Proposed Action versus approximately 155–305 acres with implementation of Alternative 2). The impacts of Alternative 3 would be similar to those of the Proposed Action and Alternative 2, with the primary difference being a greater near-term benefit for fisheries resources; Alternative 3 would reduce estimated fish entrainment and impingement losses compared with existing conditions and with the Proposed Action. The impacts of Alternative 3 would be the same as those of the Proposed Action and Alternative 2 under future conditions.

One of the primary differences between Alternative 4 and the Proposed Action, Alternative 2, and Alternative 3 is project location. The Proposed Action and Alternatives 2 and 3 would be located in a rural area with few sensitive receptors and developed land uses that could experience project impacts, especially during construction. The primary land impacts associated with the Proposed Action and Alternatives 2 and 3 would be agricultural land conversion of 6-8 acres and temporary impacts to agricultural operations. In comparison, some components of Alternative 4, in particular the untreated water conveyance pipeline, would be located in urban areas, in close proximity to sensitive receptors and developed land uses. Temporary construction impacts such as air quality, noise, traffic, and visual impacts would be substantially greater under Alternative 4 than under the Proposed Action and Alternatives 2 and 3.

In addition, the water quality and fisheries benefits of the Proposed Action, Alternative 2, and Alternative 3 would be much greater than those of Alternative 4, and Alternative 4 would increase adverse fisheries effects from the saline concentrate discharged into Suisun Bay and increase entrainment and impingement losses of larval delta smelt at the Mallard Slough intake.

Significant and Unavoidable Impacts

As shown in Table ES-1, the Proposed Action (Alternative 1), the Indirect Pipeline Alternative (Alternative 2), and the Modified Operations Alternative (Alternative 3) would result in the following significant and unavoidable impacts:

- agriculture: permanent conversion of 6-8 acres of Prime Farmland and Farmland of Statewide Importance at the intake and pump station location (direct and cumulative), and
- air quality: short-term construction emissions of criteria air pollutants (direct and cumulative).

The Desalination Alternative would result in the following significant and unavoidable impact:

- air quality: short-term construction criteria air pollutant emissions (cumulative).

Mitigation has been included to reduce these direct, indirect, and cumulative impacts but would not be sufficient to reduce them to a less-than-significant level.

Areas of Controversy and Issues to be Resolved

Areas of Controversy

There are no known areas of potential controversy associated with the Alternative Intake Project. CCWD has actively and regularly met with resource agencies, stakeholders, and the landowner to minimize any potential areas of controversy to the extent feasible. CCWD has also included project alternatives, as well as mitigation measures, in this EIR/EIS to address project-related concerns and opportunities.

Issues to be Resolved

CCWD will need to determine whether to approve the Proposed Action or an alternative for implementation. The decision will be based on numerous factors besides potential environmental impacts, including the type of financing available, permitting requirements, and implementation schedule.

Regardless of whether the Proposed Action or an alterative is selected for implementation, detailed design of project features and planning of construction will need to be coordinated with mitigation requirements so that sensitive resources in the project areas are avoided where practicable. The methods for achieving required mitigation will

need to be determined during detailed project design through consultation and coordination with the permitting agencies.

Public Involvement and Next Steps

This EIR/EIS is intended to be used by the CCWD Board and by Reclamation when considering approval of the Proposed Action or an alternative to the Proposed Action. The CCWD Board will use the EIR/EIS to consider approval of the entire project. Reclamation will use the EIR/EIS to consider approval of an additional point of diversion, pursuant to CCWD's water service contract with Reclamation. CCWD and Reclamation will also use the EIR/EIS to petition the State Water Resources Control Board for water right changes.

In accordance with CEQA and NEPA review requirements, this EIR/EIS will be circulated for public and agency review and comment for a 45-day period following the date when the U.S. Environmental Protection Agency publishes the Notice of Availability of Weekly Receipt of Environmental Impact Statements in the Federal Register, and the filing of the Notice of Completion with the California State Clearinghouse. Similar to the approach to public scoping, three public hearings have been scheduled in Concord, Antioch, and Sacramento to receive public input on the Draft EIR/EIS. These hearings will be held during the public comment period so that any comments received at the hearings can be addressed in the Final EIR/EIS. In addition, written comments from the public, reviewing agencies, and stakeholders will be accepted during the public comment period.

A Final EIR/EIS will be prepared and circulated in accordance with NEPA and CEQA requirements that will include responses to all comments. Following lead agency consideration of all comments received during public review of the Draft EIR/EIS and circulation of the Final EIR/EIS, CCWD's Board will hold a public meeting to consider certification of the Final EIR and to decide whether or not to approve the Proposed Action or an alternative. A Notice of Determination documenting the decision will then be issued. To support a decision on the project, the CCWD Board must prepare and adopt written findings of fact for each significant environmental impact identified in the EIR/EIS; a Statement of Overriding Considerations, if needed; and a Mitigation Monitoring and Reporting Program to ensure implementation of the mitigation measures and project revisions, if any, identified in the EIR/EIS.

Reclamation will circulate the Final EIS for 30 days prior to taking action on the project and issuing its Record of Decision (ROD). The ROD will identify Reclamation's decision regarding the alternatives considered and address substantive comments received on the Final EIS.

Table ES-1
Summary of Impacts and Mitigation Measures

Resource Topic/Impact	Alternative	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
Delta Water Resources				
Impact 4.2-a: Long-term Changes in Delta Water Supplies	1-4	Less than significant	None required	Less than significant
Impact 4.2-b: Long-term Changes in Delta Water Quality that Cause Violations of Delta Water Quality Standards	1-4	Less than significant	None required	Less than significant
Impact 4.2-c: Long-term Changes that Result in Substantial Water Quality Degradation that Would Adversely Affect Beneficial Uses or Substantially Change Delta User's Operations	1-4	Less than significant	None required	Less than significant
Impact 4.2-d: Long-term Changes in Delta Water Levels	1-4	Less than significant	None required	Less than significant
Delta Fisheries and Aquatic Resources				
Impact 4.3-a: Intake Construction and Increased Sedimentation, Turbidity, and Contaminants	1-3	Less than significant	Mitigation Measure 4.3-a (Alternatives 1-3): Minimize Turbidity, Sedimentation, and Other Water Quality Impacts during Construction	Less than significant
Impact 4.3-b: Underwater Sound Pressure Impact from Cofferdam Installation	1-3	Potentially significant	Mitigation Measure 4.3-b (Alternatives 1-3): Implement Measures to Reduce and/or Avoid Underwater Sound Pressure Impacts	Less than significant
Impact 4.3-c: Potential Chemical Spill During Construction	1-3	Potentially significant	Mitigation Measure 4.3-c (Alternatives 1-3): Develop and Implement a Hazardous Materials Control and Spill Prevention and Response Plan to Prevent/Avoid Hazardous Materials Impacts	Less than significant
Impact 4.3-d: Potential Fish and Macroinvertebrate Stranding During Dewatering of the Cofferdam	1-3	Potentially significant	Mitigation Measure 4.3-d (Alternatives 1-3): Develop and Implement a Fish Rescue Program during Construction to Prevent Stranding in the Cofferdam	Less than significant

Table ES-1
Summary of Impacts and Mitigation Measures

Resource Topic/Impact	Alternative	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
Impact 4.3-e: Aquatic Habitat Loss at Intake Structure Site Along Victoria Canal Shoreline	1-3	Less than significant	Mitigation Measure 4.3-e (Alternatives 1-3): Compensate for the Permanent Loss of Shallow-water Aquatic Habitat at Victoria Canal Intake Site	Less than significant
Impact 4.3-f: Hydraulic Modifications to Habitat in Victoria Canal and Adjacent to the Proposed Intake	1-3	Less than significant	None required	Less than significant
Impact 4.3-g: Fish Losses through Entrainment and Impingement at CCWD Intakes	1-3	Beneficial	Mitigation Measure 4.3-g (Alternatives 1-3): Minimize Fish Entrainment and Impingement at the New Victoria Canal Intake	Beneficial
Impact 4.3-h: Effects on Delta Fisheries and Aquatic Habitat as Indicated by Changes in Key Hydrologic Indicators	1-3	Less than significant	None required	Less than significant
Impact 4.3-i: Periodic Maintenance Dredging and Associated Effects on Fish	1-3	Less than significant	None required	Less than significant
Impact 4.3-a: Fish Losses Through Entrainment and Impingement at CCWD Intakes	4	Potentially significant	Mitigation Measure 4.3-a (Alternative 4): Minimize Impacts to Larval Delta Smelt and Juvenile Striped Bass at Mallard Slough Intake Through Fish Monitoring and Operational Limitations	Less than significant
Impact 4.3-b: Saline Discharges from the New Concentrate Disposal Pipeline	4	Potentially significant	Mitigation Measure 4.3-b (Alternative 4): Reduce and Avoid Saline Discharge Impacts	Less than significant
Impact 4.3-c: Cumulative Fish Losses Through Entrainment and Impingement at CCWD Intakes	4	Potentially significant	See Mitigation Measure 4.3-a (Alternative 4)	Less than significant

Table ES-1
Summary of Impacts and Mitigation Measures

Resource Topic/Impact	Alternative	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
Earth Resources: Geology, Soils, and Seismicity				
Impact 4.4-a: Hazards Resulting from Seismically Induced or Soil-Related Structural Failure of Project Facilities	1-4	Potentially significant	Mitigation Measure 4.4-a (Alternatives 1-4): Complete a Design-Level Geotechnical Study for the Project that Assesses Site-Specific Conditions, and Implement Applicable Study Recommendations in Facility Construction Design	Less than significant
Impact 4.4-b: Project-Related Soil Erosion	1-3	Less than significant	None required	Less than significant
Impact 4.4-b: Project-Related Soil Erosion	4	Potentially significant	Mitigation Measure 4.4-b (Alternative 4): Evaluate Site-specific Soil Erosion Hazards as Part of the Geotechnical Study, and Include Relevant Erosion-Control Requirements in the Construction Specifications	Less than significant
Local Hydrology and Water Quality				
Impact 4.5-a: Temporary Degradation of Surface Water Quality as a Result of Contaminant Releases and Runoff during Construction Activity	1-4	Potentially significant	Mitigation Measure 4.5-a (Alternatives 1-4): Prepare and Implement a Stormwater Pollution Prevention Plan (SWPPP) that Minimizes the Potential Contamination of Surface Waters, and Comply with Regional Water Quality Control Board (RWQCB) Requirements to Protect Water Quality	Less than significant
Impact 4.5-b: Potential Contribution of Project Facilities to Flooding	1-3	Less than significant	None required	Less than significant
Impact 4.5-c: Change in Local Flooding Potential as a Result of Levee Modifications	1-3	Less than significant	None required	Less than significant

Table ES-1
Summary of Impacts and Mitigation Measures

Resource Topic/Impact	Alternative	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
Impact 4.5-d: Cumulative Temporary Degradation of Surface Water Quality as a Result of Construction Activity	1-3	Potentially significant	Mitigation Measure 4.5-d (Alternatives 1-3): Prepare and Implement a SWPPP that Minimizes the Potential Contamination of Surface Waters, and Comply with RWQCB Requirements to Protect Water Quality	Less than significant
Impact 4.5-b: Potential Contribution of Desalination Alternative Facilities to Flooding	4	Potentially significant	Mitigation Measure 4.5-b (Alternative 4): Prepare a Drainage Study and Implement the Resulting Recommendations to Ensure that the Local Drainage System Will Accommodate Additional Runoff	Less than significant
Terrestrial Biological Resources				
Impact 4.6-a: Potential Fill of Jurisdictional Waters of the United States and Loss of Sensitive Habitat	1-4	Potentially significant	Mitigation Measure 4.6-a (Alternatives 1-4): Minimize Potential Fill of Jurisdictional Waters of the United States and Loss of Sensitive Habitat, and Compensate for Unavoidable Impacts	Less than significant
Impact 4.6-b: Potential Loss of Special-status Plants	1-4	Potentially significant	Mitigation Measure 4.6-b (Alternatives 1-4): Minimize Potential Effects on Special-status Plants, and Mitigate for Loss If Required	Less than significant
Impact 4.6-c: Potential Effects on Giant Garter Snake	1-3	Potentially significant	Mitigation Measure 4.6-c (Alternatives 1-3): Implement Avoidance and Mitigation Measures as Needed to Minimize Potential Effects on Giant Garter Snake	Less than significant
Impact 4.6-d: Potential Effects on Greater Sandhill Crane	1-3	Less than significant	None required	Less than significant

Table ES-1
Summary of Impacts and Mitigation Measures

Resource Topic/Impact	Alternative	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
Impact 4.6-e: Potential Effects on Swainson's Hawk, White-Tailed Kite, Northern Harrier, and Other Raptors	1-3	Potentially significant	Mitigation Measure 4.6-e (Alternatives 1-3): Conduct Surveys and Implement Protective Measures, if Needed, to Minimize Potential Effects on Swainson's Hawk, White-Tailed Kite, Northern Harrier, and Other Raptors	Less than significant
Impact 4.6-f: Potential Effects on Burrowing Owl	1-3	Potentially significant	Mitigation Measure 4.6-f (Alternatives 1-3): Conduct Surveys and Implement Protective Measures, if Required, to Minimize Potential Effects on Burrowing Owl	Less than significant
Impact 4.6-g: Potential Effects on Western Pond Turtle	1-3	Potentially significant	Mitigation Measure 4.6-g (Alternatives 1-3): Conduct Surveys and Implement Protective Measures, If Required, to Minimize Potential Effects on Western Pond Turtle	Less than significant
Impact 4.6-h: Potential Effects on California Horned Lark and Loggerhead Shrike	1-3	Less than significant	None required	Less than significant
Impact 4.6-i: Potential Effects on Tricolored Blackbird	1-3	Potentially significant	Mitigation Measure 4.6-i (Alternatives 1-3): Conduct Surveys and Minimize Potential Effects on Tricolored Blackbird, If Required	Less than significant
Impact 4.6-j: Potential Effects to NCCP Terrestrial Habitat Types	1-3	Potentially significant	Mitigation Measure 4.6-j (Alternative 1-3): Implement Mitigation Measures 4.6-a through 4.6-i (Alternative 1) to Minimize Potential Effects to NCCP Terrestrial Habitat Types	Less than significant
Impact 4.6-k: Potential Cumulative Effects on Terrestrial Special-status Species and Habitats	1-3	Potentially significant	Mitigation Measure 4.6-k (Alternatives 1-3): Implement Mitigation Measures 4.6-a Through 4.6-c, 4.6-e Through 4.6-g, and 4.6-i (Alternative 1) to Minimize Potential Effects on Sensitive Resources	Less than significant

Table ES-1
Summary of Impacts and Mitigation Measures

Resource Topic/Impact	Alternative	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
Impact 4.6-c: Potential Disturbance or Removal of Habitat for California Clapper Rail, California Black Rail, and Salt Marsh Harvest Mouse	4	Potentially significant	Mitigation Measure 4.6-c (Alternative 4): Implement Avoidance and Mitigation Measures, If Required, to Minimize Potential Loss of Habitat for California Clapper Rail, California Black Rail, and Salt Marsh Harvest Mouse	Less than significant
Impact 4.6-d: Potential Effects on Burrowing Owl	4	Potentially significant	Mitigation Measure 4.6-d (Alternative 4): Conduct Surveys and Implement Protective Measures, If Required, to Minimize Potential Effects on Burrowing Owl	Less than significant
Impact 4.6-e: Potential Effects on Northern Harrier, White-Tailed Kite, And Other Raptors	4	Potentially significant	Mitigation Measure 4.6-e (Alternative 4): Conduct Surveys and Implement Protective Measures, If Needed, to Minimize Potential Effects on Northern Harrier, White-Tailed Kite, and Other Raptors	Less than significant
Impact 4.6-f: Potential Effects on Western Pond Turtle	4	Potentially significant	Mitigation Measure 4.6-f (Alternative 4): Conduct Surveys and Implement Protective Measures, if Required, to Minimize Potential Effects on Western Pond Turtle	Less than significant
Impact 4.6-g: Potential Effects on Habitat for Saltmarsh Common Yellowthroat, Suisun Song Sparrow, and Loggerhead Shrike	4	Less than significant	None required	Less than significant
Impact 4.6-h: Potential Long-term Effects of the Brine Discharge into Suisun Bay	4	Potentially significant	Mitigation Measure 4.6-h (Alternative 4): Evaluate Potential Long-term Effects of the Brine Discharge into Suisun Bay and Implement Actions to Meet RWQCB, USFWS, NMFS, and DFG Approval	Less than significant
Impact 4.6-i: Potential Cumulative Effects on Terrestrial Special-status Species and Habitats	4	Potentially significant	Mitigation Measure 4.6-i (Alternative 4): Implement Mitigation Measures 4.6-a Through 4.6-f and 4.6-h (Alternative 4) to Minimize Potential Effects on Sensitive Resources	Less than significant

Table ES-1
Summary of Impacts and Mitigation Measures

Resource Topic/Impact	Alternative	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
Land Use				
Impact 4.7-a: Conflicts with Existing Land Use Goals and Policies of Affected Jurisdictions	4	Less than significant	None required	Less than significant
Agriculture				
Impact 4.8-a: Conversion of Prime Farmland and Farmland of Statewide Importance to Non-agricultural Uses	1-3	Significant	Mitigation Measure 4.8-a (Alternatives 1-3): Preserve the Agricultural Productivity of Prime Farmland and Farmland of Statewide Importance to the Extent Feasible	Significant and unavoidable
Impact 4.8-b: Conflict with Agricultural Zoning or Williamson Act Contracts	1-3	Less than significant	None required	Less than significant
Impact 4.8-c: Cumulative Conversion of Prime Farmland and Farmland of Statewide Importance to Nonagricultural Use	1-3	Significant	See Mitigation Measure 4.8-a	Significant and unavoidable
Transportation and Circulation				
Impact 4.9-a: Temporary Effects on Traffic, Including Effects on Emergency Service Response Times and Access, during Construction	1-3	Less than significant	None required	Less than significant
Impact 4.9-b: Long-term Increase in Traffic on Local Roadways	1-4	Less than significant	None required	Less than significant
Impact 4.9-c: Temporary Increase in Traffic Hazards on Local Roadways Near the Project Site	1-3	Potentially significant	Mitigation Measure 4.9-c (Alternatives 1-3): Prepare and Implement a Traffic Control and Safety Assurance Plan	Less than significant
Impact 4.9-d: Cumulative Increase in Traffic on Local Roadways	1-3	Less than significant	None required	Less than significant

Table ES-1
Summary of Impacts and Mitigation Measures

Resource Topic/Impact	Alternative	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
Impact 4.9-a: Temporary Increase in Traffic on Local Roadways	4	Less than significant	None required	Less than significant
Impact 4.9-c: Temporary Traffic Delays and Access Restrictions, Including Potential Delays in Emergency Vehicle Response Times	4	Potentially significant	Mitigation Measure 4.9-c (Alternative 4): Prepare and Implement a Traffic Control and Safety Assurance Plan	Less than significant
Impact 4.9-d: Temporary Increase in Traffic Hazards on Local Roadways Near Construction Areas	4	Significant	Mitigation Measure 4.9-d (Alternative 4): Prepare and Implement a Traffic Control and Safety Assurance Plan	Less than significant
Impact 4.9-e: Temporary Disruptions to Rail Operations	4	Less than significant	None required	Less than significant
Impact 4.9-f: Temporary Disruptions to Transit Service	4	Potentially significant	Mitigation Measure 4.9-f (Alternative 4): Coordinate with Transit Providers to Ensure That Disruption of Public Transit Service is Minimized	Less than significant
Impact 4.9-g: Cumulative Increase in Traffic on Local Roadways	4	Less than significant	None required	Less than significant
Air Quality				
Impact 4.10-a: Generation of Short-Term Construction Criteria Air Pollutant Emissions	1-3	Significant	Mitigation Measure 4.10-a (Alternatives 1-3): Implement SJVAPCD and BAAQMD Measures to Control Construction-Generated Air Pollution Emissions	Significant and unavoidable
Impact 4.10-b: Generation of Long-Term Operational (Regional) Criteria Air Pollutant Emissions	1-4	Less than significant	None required	Less than significant
Impact 4.10-c: Generation of Long-Term Operational (Local) Mobile-Source Carbon Monoxide Emissions	1-4	Less than significant	None required	Less than significant

Table ES-1
Summary of Impacts and Mitigation Measures

Resource Topic/Impact	Alternative	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
Impact 4.10-d: Exposure of Sensitive Receptors to Toxic Air Contaminants	1-4	Less than significant	None required	Less than significant
Impact 4.10-e: Exposure of Sensitive Receptors to Odorous Emissions	1-4	Less than significant	None required	Less than significant
Impact 4.10-f: Cumulative Generation of Short-Term Construction Criteria Air Pollutant Emissions	1-3	Significant	Mitigation Measure (Alternatives 1-3): Implement SJVAPCD and BAAQMD Measures to Control Construction-Generated Air Pollution Emissions	Significant and unavoidable
Impact 4.10-a: Generation of Short-Term Construction Criteria Air Pollutant Emissions	4	Significant	Mitigation Measure 4.10-a (Alternative 4): Implement BAAQMD Measures to Control Construction-Generated Air Pollutants	Less than significant
Impact 4.10-f: Cumulative Generation of Short-Term Construction Criteria Air Pollutant Emissions	4	Significant	See Mitigation Measure 4.10-a (Alternative 4)	Significant and unavoidable
Noise				
Impact 4.11-a: Generation of Short-Term Construction Noise	1-3	Potentially significant	Mitigation Measure 4.11-a (Alternative 1): Implement Measures to Control Generation of Short-Term Construction Noise	Less than significant
Impact 4.11-b: Long-Term Increases in Noise	1-3	Less than significant	None required	Less than significant
Impact 4.11-c: Exposure of Sensitive Receptors to or Generation of Excessive Ground-Borne Vibration or Noise	1-4	Less than significant	None required	Less than significant
Impact 4.11-a: Generation of Short-Term Construction Noise	4	Significant	Mitigation Measure 4.11-a (Alternative 4): Implement Measures to Control Generation of Short-Term Construction Noise	Less than significant

Table ES-1
Summary of Impacts and Mitigation Measures

Resource Topic/Impact	Alternative	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
Impact 4.11-b: Generation of Long-Term Operational Noise	4	Less than significant	None required	Less than significant
Utilities and Service Systems				
Impact 4.12-a: Temporary Disruption of Utility Services during Construction	1-3	Less than significant	None required	Less than significant
Impact 4.12-b: Increases in Energy Consumption	1-4	Less than significant	None required	Less than significant
Impact 4.12-c: Increases in Solid Waste Generation	1-4	Less than significant	None required	Less than significant
Impact 4.12-a: Temporary Disruption of Utility Services during Construction	4	Potentially significant	Mitigation Measure 4.12-a (Alternative 4): Reduce the Potential for Damage to Existing Utilities	Less than significant
Hazardous Materials				
Impact 4.13-a: Potential Creation of a Public Health Hazard Through the Use of Hazardous Materials	1-4	Less than significant	None required	Less than significant
Impact 4.13-b: Potential Exposure of Construction Workers and CCWD Personnel to Hazardous Materials	1-3	Potentially significant	Mitigation Measure 4.13-b (Alternatives 1-3): Coordinate with the Applicable Landowners and Land Managers to Ensure That Temporary Construction Workers and CCWD Personnel Are Not Exposed to Harmful Levels of Pesticides from Adjacent Agricultural Practices	Less than significant
Impact 4.13-c: Potential Wildfire Hazard	1-4	Less than significant	None required	Less than significant

Table ES-1
Summary of Impacts and Mitigation Measures

Resource Topic/Impact	Alternative	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
Impact 4.13-b: Potential Exposure of Construction Workers to Hazardous Materials and Conditions	4	Potentially significant	Mitigation Measure 4.13-b(1) (Alternative 4): Complete a Hazardous Materials Records Search and a Phase I Environmental Site Assessment for the Project Footprint, and Implement Appropriate Measures to Prevent the Exposure of Construction Workers to On-Site Hazardous Materials Mitigation Measure 4.13-b(2) (Alternative 4): Reduce the Potential for Damage to Existing Utilities	Less than significant
Visual Resources				
Impact 4.14-a: Temporary Changes in Scenic Vistas, Scenic Resources, and Existing Visual Character	1-4	Less than significant	None required	Less than significant
Impact 4.14-b: Long-Term Changes in Scenic Vistas, Scenic Resources, and Existing Visual Character	1-4	Less than significant	None required	Less than significant
Impact 4.14-c: Changes in Light or Glare	1-4	Less than significant	None required	Less than significant
Recreation				
Impact 4.15-a: Temporary Changes in Recreational Opportunities during Project Construction	1-4	Less than significant	None required	Less than significant
Impact 4.15-b: Long-term Changes in Recreation Opportunities	1-4	Less than significant	None required	Less than significant

Table ES-1
Summary of Impacts and Mitigation Measures

Resource Topic/Impact	Alternative	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
Cultural Resources				
Impact 4.16-a: Damage to or Destruction of Previously Undiscovered Cultural Resources on the Project Site(s)	1-4	Potentially significant	Mitigation Measure 4.16-a(1) (Alternatives 1-4): Survey Previously Unexamined Areas before the Beginning of Any Project–Related Ground Disturbance in These Areas, and Implement Further Mitigation as Necessary Mitigation Measure 4.16-a(2) (Alternatives 1-4): Restrict Ground Disturbance and Implement Measures to Protect Archaeological Resources if Discovered during Surveys or Ground-Disturbing Activities	Less than significant
Impact 4.16-b: Discovery of Human Remains during Construction	1-4	Potentially significant	Mitigation Measure 4.16-b (Alternatives 1-4): Stop Potentially Damaging Work if Human Remains Are Uncovered During Construction, Assess the Significance of the Find, and Pursue Appropriate Management	Less than significant
Impact 4.16-c: Damage to or Destruction of Documented Cultural Resources	4	Less than significant	None required	Less than significant
Paleontological Resources				
Impact 4.17-a: Potential Disturbance of Paleontological Resources During Earth-Moving Activities	4	Potentially significant	Mitigation Measure 4.17-a (Alternative 4): Conduct Construction Worker Personnel Education and Perform Construction Monitoring	Less than significant
Socioeconomic Effects				
Impact 4.18-a: Potential Permanent Decrease in Local Economic Activity and Fiscal Revenues	1-3	Less than significant	None required	Less than significant

Table ES-1
Summary of Impacts and Mitigation Measures

Resource Topic/Impact	Alternative	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
Impact 4.18-b: Temporary Economic and Fiscal Impact	1-3	Less than significant	None required	Less than significant
Environmental Justice				
Impact 4.19-a: Potential Disproportionate Effects on Minority and Low-Income Populations	4	Less than significant	None required	Less than significant