

Executive Summary

Approach to the Executive Summary

This executive summary is intended to provide a concise distillation of the EIR for at-a-glance convenience. As such, EIR content is used verbatim to the maximum extent possible. The heading structure and titles are consistent between the executive summary and EIR to facilitate easy reference to EIR sections. The executive summary contents are limited to Chapter 1 (Introduction), Chapter 2 (Project Description and Alternatives), and a table of environmental effects.

Introduction—Summary

Overview

This Delta Wetlands Project Place of Use Environmental Impact Report (Place of Use EIR, or EIR) has been prepared under the direction of the Semitropic Water Storage District (Semitropic) in accordance with the requirements of the California Environmental Quality Act (CEQA). This Place of Use EIR analyzes potential environmental effects associated with the diversion and storage of water by the Delta Wetlands Project (Project) and the supplying of that water to the places of use and the supplemental storage of that water in the Semitropic and Antelope Valley groundwater banks as specified in the petitions to change water right Application Nos. 29062, 29066, 30268, and 30270 filed with the State Water Resources Control Board (State Water Board). The Lead Agency has determined the Project is of statewide, regional, or area wide significance in accordance with CEQA Guidelines section 15206.

The potential environmental impacts of the Project, with the exception of the more detailed analysis of place of use and underground storage impacts analyzed in this EIR, were first analyzed in the Project 1995 Draft Environmental Impact Report/Environmental Impact Statement (1995 DEIR/EIS), the 2000 Revised Draft Environmental Impact Report/Environmental Impact Statement (2000 RDEIR/EIS), and the 2001 Final Environmental Impact Report (SCH# 1988020824) (2001 FEIR), prepared on behalf of the State Water Board to satisfy the requirements of CEQA. A Final Environmental Impact Statement (FEIS) was issued by the U.S. Army Corps of Engineers (Corps) in July 2001 (66 Federal Register [FR] 40698 [2001]) to satisfy the requirements of the National Environmental Policy Act (NEPA). The Third District Court of Appeal in *Central Delta Water Agency v. State Water Resources Control Board*, 124 Cal. App. 4th 245 (2004), set aside the water right permits and accompanying CEQA documents for failure “to specify an actual use of and the amounts of water to be appropriated.” However, the underlying environmental analysis of the EIR was

not overturned (nor was there any challenge to the EIS). Therefore, this Place of Use EIR incorporates the relevant portions of the 1995 DEIR/EIS, 2000 RDEIR/EIS, 2001 FEIR, and 2001 FEIS by reference, as identified in the specific sections of this EIR in accordance with State CEQA Guidelines Section 15150. The incorporated documents are included on each compact disc of the digital version of this EIR and are available for public review at the Project website, <http://deltawetlandsproject.com>, and at public buildings as referenced in the included distribution list.

The Project would increase the availability of high-quality water in the Sacramento–San Joaquin River Delta (Delta) for export or outflow through its six basic parts:

- diversion of water in the Delta;
- water storage on two Reservoir Islands (Bacon Island and Webb Tract);
- compensation for wetland and wildlife effects of the water storage operations on the Reservoir Islands by implementing a Habitat Management Plan on two Habitat Islands (Bouldin Island and Holland Tract);
- supplemental water storage in the Semitropic Groundwater Storage Bank and the Antelope Valley Water Bank south of the Delta;
- provision of water supply for designated south-of-Delta users; and
- release of water for water quality enhancement in the Bay-Delta Estuary in the fall as an additional beneficial water use in a designated place of use.

The first three aspects of the Project are unchanged from the Project as analyzed in the 1995 DEIR/EIS, 2000 RDEIR/EIS, and 2001 FEIR and conditioned by State Water Board Water Right Decision 1643 (D-1643), water right protest dismissal agreements between the Project proponent (Delta Wetlands Properties [DW or Project applicant]) and various parties to the State Water Board’s water right hearings, and the Biological Opinions (BOs) of the National Marine Fisheries Service (NMFS), the U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Game (DFG). The portions of the Project that remain unchanged are reviewed and updated within the document.

The integration of the in-Delta water storage element with the Semitropic Groundwater Storage Bank and the Antelope Valley Water Bank is a new element of the Project. The permitted and operational Semitropic Groundwater Storage Bank, its Stored Water Recovery Unit, and Antelope Valley Water Bank have been fully analyzed in the Semitropic Groundwater Banking Project Final EIR (SCH#1993072024), Semitropic Groundwater Banking Project Stored Water Recovery Unit Final Supplemental EIR (SCH#1999031100), and Antelope Valley Water Bank Final EIR (SCH#2005091117) and are not analyzed in this Place of Use EIR.

The location of the Project islands within the Delta is shown in Figures 1-1a and 1-1b. The places of use by county are shown in Figure 1-2, followed by place of use maps for each potential service area that may receive Project water (Figures 1-3, 1-4a through 1-4g, 1-5a through 1-5f, and 1-6).

Focus of This Environmental Impact Report

Since the 2001 FEIR, the Project applicant, the original Project proponent, has entered into a partnership with Semitropic to develop the Project, to integrate the Project into the operation of the Semitropic Groundwater Storage Bank and the Antelope Valley Water Bank, and to provide Project water for agricultural uses within Semitropic's service area.

The partnership with Semitropic allows the Project to take advantage of Semitropic's innovative and highly successful groundwater banking programs, including its Semitropic Groundwater Storage Bank and Stored Water Recovery Unit and the Antelope Valley Water Bank, managed by a joint powers authority that includes Semitropic. The addition of groundwater banking capability south of the Delta to the Project provides additional water supply reliability and operational flexibility in the provision of water to the places of use.

Changes to the Project Description

In compliance with *Central Delta Water Agency v. State Water Resources Control Board*, 124 Cal.App.4th 245 (2004), this Place of Use EIR updates the water supply portion of the Project to identify specific places of use of water. Petitions to change the Project's water rights applications to add places of use and places of underground storage have been filed with the State Water Board.

Accordingly, the scope of this CEQA analysis focuses primarily on the changes to the Project description proposed in the petitions for change regarding specific places of use for Project water, estimated diversion amounts, beneficial uses, means of transfer, and storage of water in groundwater banks. Changes to the Project description and additional information on the places of use are discussed in greater detail in Chapter 2, "Project Description and Alternatives."

Description of Updated Resource Analyses

Generally, the resource analyses in the prior documents, incorporated herein by reference, accurately describe the current environmental and regulatory settings, environmental impacts, and needed mitigation measures relevant to each resource. As needed, this Place of Use EIR updates resource analyses of the 1995 DEIR/EIS, 2000 RDEIR/EIS, and 2001 FEIR to address changed circumstances. Using the CEQA Guidelines as a reference, the Lead Agency developed criteria to determine when an update of a resource analysis was needed. Each resource was considered, and analysis updated, if any of the following were present:

- changes in the Project description resulting in new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- changes occurring with respect to the circumstances under which the Project is undertaken resulting in new significant environmental effects or a

substantial increase in the severity of previously identified significant effects;
and

- new information that was not known at the time of the previous environmental analyses, that shows:
 - a change in severity of the impact; or
 - that the mitigation measures or alternatives previously analyzed and found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the Project, but the Project applicant declines to adopt; or
 - that new mitigation measures or alternatives substantially different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the Project applicant declines to adopt.

This EIR attempts to efficiently and appropriately apply the environmental analyses of the prior CEQA and NEPA documents. However, the headings and identification coding system for impacts and mitigation measures may deviate from prior documents to facilitate the logic and structure of this EIR for readability and internal consistency.

Summary of New Information and Changed Circumstances

This Place of Use EIR will also reevaluate the Project and analyses from the 1995 DEIR/EIS, 2000 RDEIR/EIS, 2001 FEIR, and 2001 FEIS in light of regulatory changes and other developments and studies or planning efforts conducted since 2001 that may affect the existing conditions in the Delta or understanding of potential impacts from Project operations. Major new information and circumstances included in subsequent chapters and sections include, but are not limited to:

- California Department of Water Resources' (DWR's) Integrated Storage Investigation (ISI) Studies (see Chapter 2, "Project Description and Alternatives," Chapter 3, "Project Operations," and Section 4.3, Flood Control and Levee Stability);
- University of California, Davis (UC Davis)/Public Policy Institute of California (PPIC) Reports: "Envisioning Futures for the Sacramento–San Joaquin Delta" and "Comparing Futures for the Sacramento–San Joaquin Delta" (see Chapter 2, "Project Description and Alternatives");
- Delta Vision Blue Ribbon Task Force Report (see Chapter 2, "Project Description and Alternatives");
- Bay Delta Conservation Plan (BDCP) planning and evaluation efforts for water supply reliability and fish species protection in the Delta (see Chapter 2, "Project Description and Alternatives," and Section 4.5, Fish);

- Delta water legislative package (see Chapter 2, “Project Description and Alternatives);
- State Water Board review and update of the 1995 Water Quality Control Plan for the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (1995 WQCP) (see Section 4.1, Water Supply);
- Environmental Water Account (EWA) and the Yuba Accord (See Section 4.1, Water Supply);
- legal challenges to the USFWS and NMFS BOs on the Central Valley Project (CVP) and State Water Project (SWP) Operations Criteria and Plan (OCAP), the Interim Remedial Order issued by Judge Wanger on December 14, 2007, in *Natural Resources Defense Council, et al. v. Kempthorne*, and the December 2008 USFWS BO and the June 2009 NMFS BO (see Section 4.5, Fish);
- studies and evaluations by Interagency Ecological Program (IEP) of the pelagic organism decline (see Section 4.5, Fish);
- Delta Risk Management Strategy (DRMS) Report (see Section 4.3, Flood Control and Levee Stability);
- the Jones Tract levee failure and flooding in June 2004 as described and evaluated by DWR (See Section 4.2, Water Quality); and
- DWR 2006 Report on “Progress on Incorporating Climate Change into Management of California’s Water Resources” (see Section 4.14, Climate Change).

Project History

The Project, through private party initiative, first filed water right applications with the State Water Board and a Department of the Army permit under Clean Water Act (CWA) Section 404 for the discharge of dredged or fill material into waters of the United States and under the Rivers and Harbors Act (RHA) Section 10 for activities within navigable waters with the Corps in 1987. Through agency coordination and public review, and the recent partnerships with Semitropic and with water users, the Project has gone through several iterations. A timeline of the Project history, as described below, is provided in Table 1-2 at the end of Chapter 1.

The following major events characterize the Project history (in chronological order):

- 1990 Draft Environmental Impact Statement/
Environmental Impact Report
- 1995 Draft Environmental Impact Statement/
Environmental Impact Report
- Fisheries Consultation and Biological Opinions
- 1997 Historical Preservation Consultation

- 2000 Revised Draft Environmental Impact Report/
Environmental Impact Statement
- 2000 State Water Board Water Right Hearing
- 2001 Final Environmental Impact Report
- 2001 Final Environmental Impact Statement and Clean Water Act 404
Permit
- California Endangered Species Act
Incidental Take Permit and Habitat Management Plan
- Legal Challenges to the Final Environmental Impact Report and
Decision 1643

Partnership between the Project Applicant and Semitropic and Addition of Groundwater Banking

The Project applicant and Semitropic have partnered to jointly develop and implement the Project. Ownership of the Project islands and many regulatory applications will remain in the Project applicant's name, but the Project will be implemented by Semitropic for the benefit of Semitropic, the Project applicant, and the users of the Project water. Semitropic will also integrate the Project into its groundwater banking operations in the Semitropic Groundwater Bank and the Antelope Valley Water Bank. The Project applicant will continue to manage the Project islands before Project construction and assist Semitropic in regulatory permitting and financing. Accordingly, the Project is no longer a private venture but a public-private partnership.

The Project will benefit from Semitropic's expertise gained from developing and managing its highly successful groundwater banking operations. Project water users will gain more flexibility and reliability of water supplies with the addition of south-of-Delta banking. Semitropic will benefit from the Project's new source of water supply that will augment the water assets in its groundwater banks. Semitropic's landowners will benefit from the banking of Project water in the groundwater bank through higher groundwater levels and reduced overdraft, improved groundwater quality, and reduced pump lift costs. Furthermore, a portion of the water supply yield of the Project will be allocated to irrigation purposes within Semitropic's acre service area.

Project water supply that is available in excess of the immediate needs of the other places of use will be banked within the Semitropic Groundwater Storage Bank and Antelope Valley Water Bank. Through appropriate arrangements with its sister agency in Kern County, the Kern County Water Agency, Semitropic will facilitate the conveyance of Project water to the groundwater banks and the places of use. The groundwater banking and water conveyance elements of the Project are described in more detail in Chapter 2, "Project Description and Alternatives."

As the public agency carrying out the proposed Project (CEQA Guidelines Section 15051), Semitropic, in coordination with the State Water Board, assumed the role as CEQA lead agency in June 2007. Semitropic will investigate opportunities to partner through a joint powers authority or other mechanism with the other public agencies participating in the Project including the four reclamation districts responsible for the Project islands and the public agencies using Project water.

Project Purpose and Objectives

The overall purpose of the Project is to increase the availability of high-quality water in the Delta for export or outflow by storing water on two Reservoir Islands (Webb Tract and Bacon Island) and by doing so, increase the reliability of water supplies for Semitropic and other places of use including Golden State, Metropolitan, Western, and Valley District. The storage of surplus Project water in the Semitropic Groundwater Storage Bank and Antelope Valley Water Bank for later use by those users will reduce groundwater overdraft and reduce pumping lift for water users within those basins as well as provide additional dry year water supply reliability for the Project users. Further, the Project would compensate for wetland and wildlife effects of the water storage operations on the Reservoir Islands by implementing an HMP on two dedicated Habitat Islands (Bouldin Island and Holland Tract).

The Project purpose would be met by diverting Delta inflow during times of surplus Delta outflow (after all water quality or flow requirements for the San Francisco Bay/Sacramento–San Joaquin Delta [Bay-Delta] Estuary are met). The diverted water would be stored on the Reservoir Islands until released for export to south-of-Delta users, including Semitropic’s service area and the other specified places of use, or for environmental benefits in the Bay-Delta estuary. No infrastructure or facilities, other than those already described in the State Water Board 2001 FEIR (SCH#1988020824), are proposed to support the Project purpose. Water would be delivered via existing and previously approved facilities operated and maintained by the SWP, CVP, and those within the proposed places of use. As noted above, the Project would provide managed wetlands and wildlife habitat areas. Additionally, the Project would accommodate recreational uses.

Responsible and Trustee Agencies

In addition to Semitropic’s action as the Lead Agency, this EIR will be used by Responsible and Trustee Agencies to determine the effects of the proposed action. Likely Responsible and Trustee Agencies for the Project are presented in Table 1-1 (Chapter 1).

EIR Public Review Period

This draft EIR is being circulated for a 45-day public review period, during which the public and interested agencies are encourage to submit comments on the document. To facilitate public review, a public hearing will be conducted during the review period to solicit oral comments on this EIR. Public notice of the hearing date and location, and of the date of public comment closure, will be provided by mail, through newspaper publication, and through the Project website, <http://deltawetlandsproject.com>.

Comments should be sent to:

ICF International
630 K Street, Suite 400
Sacramento, CA 95814
Attn: Megan Smith, Project Manager

Once all comments have been assembled and reviewed, the lead agency will prepare responses on all notable environmental issues that have been raised. These responses to comments, combined with the draft EIR, will constitute the final EIR.

Areas of Known Controversy

Based on public and agency comments received throughout the project planning process, the Project applicant and lead agency have identified several areas of controversy related to the proposed Project raised by agencies and the public during the public scoping process:

- Delta sustainability;
- Delta fisheries;
- Water supply; and
- Other environmental effects, including:
 - Delta hydrology and water quality;
 - Levee stability;
 - Seepage; and
 - Agricultural land conversion.

These areas of known controversy are explored in more detail in Chapter 1.

Project Description and Alternatives—Summary

Introduction

Chapter 2 reviews the basic description of the Project and presents, in detail, the following changes to the Project description that have been proposed since the 2001 FEIR.

- Specific places of use have been designated for Project water to improve the reliability of the existing supplies of water for irrigation and municipal purposes. The designated places of use include Semitropic, Golden State, and Metropolitan and its member agencies' service areas.
- An operational element has been added for banking Project water in the Semitropic Groundwater Storage Bank and the Antelope Valley Water Bank for later use by Semitropic, Metropolitan, and other designated users. This allows Project water to be stored until there is a water delivery deficit (i.e., unmet existing demand) in the designated places of use.
- The levee design has been revised to improve Reservoir Island structural integrity.
- Environmental commitments have been incorporated into the Project design to avoid, minimize, and mitigate environmental impacts and are to be considered as part of the analysis.

Chapter 2 also summarizes new information and changed circumstances that may affect the existing or future conditions in the Delta or the Project description.

The operations of the Project in the Delta and the operations of the groundwater banks and the monthly deliveries to designated places of use are described in more detail in Chapter 3 "Project Operations." New specific information or changed circumstances that affect Project operations are described in Chapter 3, "Project Operations," and new specific information that may change the impact assessments are described in the respective appropriate resource sections of this Place of Use EIR.

The complete Project description providing the basis for the summary below can be found in the 1995 DEIR/DEIS (Pages 2-3 through 2-15, and Appendix 2, Supplemental Description) and the 2000 RDEIR/EIS (Pages 2-1 through 2-5).

Changes to the Project since the 2001 FEIR

The major changes in the Project description and operation are summarized and discussed below. The Project monthly operations with these changes are described in Chapter 3.

Designated Places of Use

The Project applicant's original applications filed in 1987 and new applications and petitions to change the original applications filed in 1993 identify the entire SWP and CVP service areas and the Bay-Delta estuary as the place of use for the Project water. Potential users of the Project water were assumed to be any user within this broad place of use. Potential beneficial uses for the Project water included irrigation, municipal and industrial, and fish and wildlife enhancement and water quality for the Bay-Delta estuary. The Court of Appeal decision required that designated places of use be more specifically identified.

The Project applicant has identified specific places of use for Project water, including Semitropic and four other places of use, as shown in Figures 1-3 through 1-6. Valley District has not determined whether it will participate in the Project, but it is included in this EIR as a Place of Use for assessment of potential impacts. If Valley District does not elect to participate in the Project, the Final EIR will be amended accordingly. These Places of Use require additional sources of water to improve the reliability of their existing water supplies to meet current demand, and have infrastructure in place for conveyance and transfer of the Project water. The Project water would be used to improve water supply reliability for their current water uses, which include irrigation, domestic, and municipal and industrial beneficial uses. Table 2-1 in Chapter 2 defines the annual demands and estimated maximum annual deliveries of Project water for each Place of Use. The designated places of use are:

- Golden State for municipal, industrial and domestic purposes,
- Metropolitan and its member agencies' service areas for municipal and industrial purposes,
- Western for municipal and industrial purposes, and
- Valley District for municipal and industrial purposes.

Other water service providers may enter into agreements to take Project water and become additional places of use. Additional potential places of use beyond those analyzed in this EIR were discussed in the Notice of Preparation published for this EIR. Approval of additional service areas and places of use may require further CEQA analysis and petitions to the State Water Board.

Groundwater Banks

Project water not needed for designated place of use demands in a year with relatively high deliveries may be stored in the Semitropic Groundwater Storage Bank and/or the Antelope Valley Water Bank for later delivery to the designated places of use. Project water would be conveyed to the Semitropic Groundwater Storage Bank or Antelope Valley Water Bank using existing SWP and CVP and local water conveyance facilities. No new construction would be required to convey Project water to the groundwater banks for recharge (infiltration) or for pumping and delivery from the groundwater banks.

Project Description Summary

The Project would increase the availability of high-quality water in the Delta for export or outflow by storing water on two Reservoir Islands (Bacon Island and Webb Tract, see Figures 2-1 and 2-2) and would compensate for wetland and wildlife effects of the water storage operations on the Reservoir Islands by implementing an HMP on two Habitat Islands (Bouldin Island and Holland Tract, see Figures 2-3 and 2-4). The physical description of the Project is in Chapter 2, and the monthly operations of the Project are described in Chapter 3.

Some background information about the Delta and the Project islands is included in Chapter 2 to provide a framework for understanding the existing conditions of these Project islands and the proposed conversion to in-Delta Reservoir Islands and habitat management islands. More detailed descriptions of existing conditions on the Project islands and tracts are provided in each resource impact section in Chapter 4.

Project Alternatives

The 2001 FEIR and 2001 FEIS analyzed three Project alternatives (Alternatives 1, 2, and 3) and the No-Project Alternative to represent a range of Project operations for purposes of determining environmental impacts. The proposed Project in the 2001 FEIR consists of storage of water on two Reservoir Islands and implementation of an HMP on two Habitat Islands. No changes are being made to the proposed Project other than the identification of specific places of use, incorporation of several environmental commitments, and improvement to the Reservoir Island levee design.

Therefore, the alternatives analyzed in detail in the 1995 DEIR/EIS, the 2000 RDEIR/EIS, and the 2001 FEIR represent a reasonable range of alternatives. A brief summary of the Proposed Project (Alternative 2), as well as Alternatives 1, 3, and the No-Project Alternative, follow. For a more detailed discussion of the original design and operational details of the Project alternatives, please refer to the 1995 DEIR/EIS, 2000 RDEIR/EIS, and the 2001 FEIR.

Proposed Project (Alternative 2)

Alternative 2 consists of water storage on two Reservoir Islands and implementation of an HMP on two Habitat Islands. Alternative 1 entails the potential year-round diversion and storage of water on Bacon Island and Webb Tract, and wetland and wildlife habitat creation and management on Bouldin Island and Holland Tract. To operate Alternative 2, the Project would improve levees on the perimeters of the Reservoir Islands, install additional siphons and water pumps, and construct inner dike and berm systems on all four islands for shallow-water management. Under Alternative 2, during periods of availability throughout the year, water would be diverted onto the Reservoir Islands to be

stored for later sale or release and would be discharged from the islands into Delta channels for sale for beneficial uses for export or for Bay-Delta estuary needs during periods of demand. Discharges from the islands would be subject to state and federal regulatory standards, endangered species protection measures, and Delta export pumping capacities.

The Proposed Project is Alternative 2, as modified by incorporation of the BOs, FOC, WQMP, protest dismissal agreements, and other environmental commitments. In review:

- the terms and conditions of the DFG, USFWS, and NMFS BOs are based on this alternative;
- all of the revised operating criteria developed from the BOs were included in the FOC for the Project; and
- these operations were simulated and evaluated in the 2000 RDEIR/EIS.

Following the 2000 Water Rights Hearings, the WQMP was developed in the course of negotiating protest dismissal agreements with CUWA and CCWD. These water quality operations criteria are also included in the Project operations described in Chapter 3, “Project Operations,” and the resulting water quality conditions for salinity and dissolved organic carbon (DOC) are evaluated as part of the water quality impact assessment in Section 4.2, Water Quality.

Revised Project operations have been simulated for this Place of Use EIR to demonstrate the likely south-of-Delta water delivery to designated water districts and associated groundwater banking. These water supply simulations are also described in Chapter 3, “Project Operations.”

Alternative 1

Alternative 1 differs from Alternative 2 only with regard to operating criteria for diversion and discharge of stored water. Under Alternative 1, Project discharges would be subject to a conservative (strict) interpretation of “percent of inflow” export limits specified in the 1995 WQCP.

Alternative 3

Under Alternative 3 all four of the Project islands would be used as reservoirs with limited compensation habitat provided on a portion of Bouldin Island. Alternative 3 would be inconsistent with the FOC and BOs previously issued for the Project.

No-Project Alternative

The No-Project Alternative has not changed since publication of the 2001 FEIR and 2001 FEIS. If Corps permit applications or SWRCB water right permit applications for the Project are denied, the Project applicant would implement intensive agricultural operations on the four Project islands or sell the property to another entity that would likely implement intensive agriculture. The No-Project Alternative is based on the assumption that intensified agricultural conditions represent the most realistic scenario for the Project islands if permit applications are denied.

It is assumed that no new recreation facilities would be built. However, under the No-Project Alternative, an intensive for-fee hunting program would be operated on the Project islands, creating an additional 12,000 hunter-use days over existing conditions.

Under the No-Project Alternative, consumptive use would increase, reflecting more extensive agricultural use of the islands, but not measurably so at the scale of monthly water supply modeling. Currently existing siphon facilities on the islands, which are unscreened, would not be modified under the No-Project Alternative.

Project Environmental Commitments

Environmental commitments are measures incorporated by the project proponent as part of the project description, meaning they are proposed as elements of the proposed action and are to be considered in conducting the environmental analysis and determining effects and findings. The purpose of environmental commitments is to reflect and incorporate best practices into the project that avoid, minimize, or offset potential environmental effects. *Note: The term mitigation is specifically applied in this EIR only to designate measures required to reduce environmental impacts of the proposed Project, including Project environmental commitments, triggering a finding of significance.* These best practices tend to be relatively standardized and compulsory; they represent sound and proven methods to reduce the potential effects of an action. The rationale behind including environmental commitments is that the Project proponent commits to undertake and implement these measures as part of the Project in advance of impact findings and determinations in good faith to improve the quality and integrity of the Project, streamline the environmental analysis, and demonstrate responsiveness and sensitivity to environmental quality.

Several changes in Project design, mitigation measures from the 1995 DEIR/EIS and the 2000 RDEIR/EIS, and many prior agreements with Delta water rights holders or agencies (such as FOC to protect fish and the WQMP) have been incorporated as Project environmental commitments. The Project environmental commitments are listed below and described in detail in Chapter 2 and in the individual resource sections:

- Two-Island Habitat Management Plan
- Reservoir Island Construction Monitoring
- Screened Diversions
- Fish Monitoring and Habitat Protection
- Conservation Easements on Habitat Islands
- Prior Agreements with Other Parties, including CUWA, CCWD, PG&E, and EBMUD
- Improved Reservoir Island Levee Design
- Seepage Monitoring and Control System

Effects Summary Table

Table ES-1. Summary of Impacts and Mitigation Measures for the Delta Wetlands Project

Impact	Alternative	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
WATER SUPPLY				
WS-1: Reduction in Delta Consumptive Use	2	Beneficial and less than significant	No mitigation is required	–
WS-2: Increase in Delta Consumptive use	1	Less than significant	No mitigation is required	–
WS-2: Increase in Delta Consumptive Use	3	Significant and unavoidable	No mitigation is available	Significant and unavoidable
WATER QUALITY				
WQ-1: Salinity Increase at Chipps Island	1, 2, 3	Less than significant	No mitigation is required	–
WQ-2: Salinity Increase at Emmaton	1, 2, 3	Less than significant	No mitigation is required	–
WQ-3: Salinity Increase at Jersey Point	1, 2, 3	Less than significant	No mitigation is required	–
WQ-4: Salinity Increase at Exports	1, 2, 3	Less than significant	No mitigation is required	–
WQ-5: Beneficial Salinity Reductions at Exports	1, 2, 3	Less than significant	No mitigation is required	–
WQ-6: Elevated DOC Concentrations in Delta Exports	1, 2, 3	Less than significant	No mitigation is required	–
WQ-7: Increased Methylmercury Loading in the Delta	1, 2, 3	Significant	WQ-MM-1: Follow Guidelines from Proposed Delta TMDL for Methylmercury WQ-MM-2: Incorporate Mercury Methylation Control Measures in Wetland Design	Less than significant
WQ-8: Changes in Other Water Quality Variables in Delta Channel Receiving Waters	1, 2, 3	Less than significant	No mitigation is required	–
WQ-9: Potential Contamination of Stored Water by Contaminant Residues	1, 2, 3	Significant	WQ-MM-3: Conduct Assessments of Potential Contamination Sites and Remediate as Necessary	Less than significant
WQ-10: Water Pollution Caused by Construction Activities	1, 2, 3	Less than significant	No mitigation is required	–

Impact	Alternative	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
WQ-11: Increase in Pollutant Loading in Delta Channels Associated with Recreational Boating	1, 2, 3	Less than significant	No mitigation is required but the following will further reduce impacts: WQ-MM-4: Clearly Post Waste Discharge Requirements, Provide Waste Collection Facilities, and Educate Recreationists Regarding Illegal Discharges of Waste REC-MM-1: Reduce the Size or Number of Recreation Facilities	–
WQ-12: Reduction in Agricultural Pollutants	1, 2, 3	Beneficial and less than significant	No mitigation is required	–
FLOOD CONTROL AND LEVEE STABILITY				
FC-1: Improvement in Long-Term Levee Stability on Reservoir Islands	1, 2, 3	Less than significant	No mitigation is required	–
FC-2: Potential for Seepage from Reservoir Islands to Adjacent Islands	1, 2, 3	Less than significant	No mitigation is required	–
FC-3: Potential for Wind and Wave Erosion on Reservoir Islands	1, 2, 3	Less than significant	No mitigation is required	–
FC-4: Potential for Erosion of Levee Toe Berms at Pump Stations and Siphon Stations on Reservoir Islands	1, 2, 3	Less than significant	No mitigation is required	–
FC-5: Change in Potential for Levee Failure on Project Islands during Seismic Activity	1, 2, 3	Less than significant	No mitigation is required	–
FC-6: Increase in Long-Term Levee Stability on Habitat Islands	1, 2	Beneficial and less than significant	No mitigation is required	–
UTILITIES, PUBLIC SERVICES, AND HIGHWAYS				
UT-1: Increase in the Structural Integrity of County Roads	1, 2, 3	Beneficial and less than significant	No mitigation is required	–
UT-2: Reduction in Ferry Traffic from Jersey Island to Webb Tract	1, 2, 3	Less than significant	No mitigation is required	–

Impact	Alternative	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
UT-3: Increase in the Risk to Gas Lines Crossing Exterior Levees on Bacon Island Resulting from Levee Improvements	1, 2, 3	Less than significant	No mitigation required, but the following will monitor Project measures: UT-MM-1: Monitor Locations Where Gas Pipelines Cross Bacon Island Levees during and after Levee Construction	–
UT-4: Increase in PG&E Response Time to Repair a Gas Line Failure on Bacon Island	1, 2, 3	Less than significant	No mitigation is required	–
UT-5: Potential Interference with Pipeline Inspection Procedures	1, 2, 3	Less than significant	No mitigation is required	–
UT-6: Inundation of Electrical Distribution Utilities on the Reservoir Islands	1, 2	Significant	UT-MM-2: Relocate Electrical Distribution Lines to the Perimeter Levee around Webb Tract	Less than significant
UT-6: Inundation of Electrical Distribution Utilities on the Reservoir Islands	3	Significant	UT-MM-10: Relocate Electrical Distribution Lines to the Perimeter Levees around Webb and Holland Tracts and Bouldin Island	Less than significant
UT-7: Possible Need to Increase Capacity of the Existing Electrical Distribution Lines on the Project Islands	1, 2	Less than significant	No mitigation is required	–
UT-7: Possible Need to Increase Capacity of the Existing Electrical Distribution Lines on the Reservoir Islands	3	Less than significant	No mitigation is required	–
UT-8: Possible Need to Expand the Existing Electrical Distribution Lines on Webb Tract, Bouldin Island, and Holland Tract to Serve a Proposed Siphon Station and Recreation Facilities	1, 2	Significant	UT-MM-3: Extend Electrical Distribution Lines to Serve New Siphon and Pump Stations and Recreation Facilities	Less than significant
UT-8: Possible Need to Expand the Existing Electrical Distribution Lines on Webb Tract, Bouldin Island, and Holland Tract to Serve Proposed Siphon and Pump Stations and Recreation Facilities	3	Significant	UT-MM-3: Extend Electrical Distribution Lines to Serve New Siphon and Pump Stations and Recreation Facilities	Less than significant

Impact	Alternative	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
UT-9: Increase in Demand for Police Services on the Project Islands	1, 2, 3	Significant	UT-MM-4: Provide Adequate Lighting in and around Buildings, Walkways, Parking Areas, and Boat Berths UT-MM-5: Provide Private Security Services for Recreation Facilities and Boat Docks REC-MM-1 Reduce the Size or Number of Recreation Facilities	Less than significant
UT-10: Increase in Demand for Fire Protection Services on the Project Islands	1, 2, 3	Significant	UT-MM-6: Incorporate Fire Protection Features into Recreation Facility Design UT-MM-7: Provide Fire Protection Services to Webb Tract and Bacon Island	Less than significant
UT-11: Increase in Demand for Water Supply Services	1, 2, 3	Less than significant	No mitigation required, but the following will monitor Project measures: UT-MM-8: Obtain Appropriate Local and State Permits for Recreation Facility Services and Utilities	–
UT-12: Increase in Demand for Sewage Disposal Services	1, 2, 3	Less than significant	No mitigation required, but the following will monitor Project measures: UT-MM-8: Obtain Appropriate Local and State Permits for Recreation Facility Services and Utilities	–
UT-13: Increase in Demand for Solid Waste Removal	1, 2, 3	Less than significant	No mitigation required, but the following will monitor Project measures: UT-MM-8: Obtain Appropriate Local and State Permits for Recreation Facility Services and Utilities	–
UT-14: Increase in the Risk of Structural Failure of SR 12	3	Less than significant	No mitigation required, but the following will monitor Project measures: UT-MM-9: Coordinate Design and Construction of Wilkerson Dam with Caltrans	–
UT-15: Increase in the Fog Hazard on SR 12	3	Significant and unavoidable	No mitigation available	Significant and unavoidable

Impact	Alternative	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
FISH				
FISH-1: Alteration of Habitat through Construction of Project Facilities	1, 2, 3	Significant	FISH-MM-1: Conservation of Shallow-Water Vegetated Habitat REC-MM-1: Reduce the Size or Number of Recreation Facilities FISH-MM-2: Site Project Facilities to Avoid Existing Shallow-Water Vegetated Habitat FISH-MM-3: Limit Waterside Construction to Less- Sensitive Time Periods FISH-MM-4: Implement Best Management Practices for Waterside Construction	Less than significant
FISH-2: Increase in Organic Materials and Toxics and Decrease in Dissolved Oxygen of Delta Water because of Project Discharges	1, 2, 3	Less than significant	No mitigation is required	–
FISH-3: Temperature-Related Impacts on Chinook Salmon and Other Species	1, 2, 3	Less than significant	No mitigation is required	–
FISH-4: Potential Increase in Accidental Spills of Fuel and Other Materials and Boat Wake Erosion	1, 2, 3	Less than significant	No mitigation is required	–
FISH-5: Effects of the Project on Juvenile Chinook Salmon	1, 2, 3	Significant and unavoidable	FISH-MM-1: Conservation of Shallow-Water Vegetated Habitat FISH-MM-5: Implement a Fishery Improvement Mitigation Fund FISH-MM-6: Establish a Shallow-Water Aquatic Habitat Conservation Easement	Significant and unavoidable
FISH-6: Effects of the Project on Juvenile Steelhead	1, 2, 3	Significant and unavoidable	FISH-MM-1: Conservation of Shallow-Water Vegetated Habitat FISH-MM-5: Implement a Fishery Improvement Mitigation Fund FISH-MM-6: Establish a Shallow-Water Aquatic Habitat Conservation Easement	Significant and unavoidable

Impact	Alternative	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
FISH-7: Effects of the Project on Delta Smelt	1, 2, 3	Significant and unavoidable	FISH-MM-1: Conservation of Shallow-Water Vegetated Habitat REC-MM-1: Reduce the Size or Number of Recreation Facilities FISH-MM-2: Site Project Facilities to Avoid Existing Shallow-Water Vegetated Habitat FISH-MM-3: Limit Waterside Construction to Less- Sensitive Time Periods FISH-MM-4: Implement Best Management Practices for Waterside Construction FISH-MM-5: Implement a Fishery Improvement Mitigation Fund FISH-MM-6: Establish a Shallow-Water Aquatic Habitat Conservation Easement	Significant and unavoidable
FISH-8: Effects of the Project on Longfin Smelt	1, 2, 3	Significant and unavoidable	FISH-MM-1: Conservation of Shallow-Water Vegetated Habitat REC-MM-1: Reduce the Size or Number of Recreation Facilities FISH-MM-2: Site Project Facilities to Avoid Existing Shallow-Water Vegetated Habitat FISH-MM-3: Limit Waterside Construction to Less- Sensitive Time Periods FISH-MM-4: Implement Best Management Practices for Waterside Construction FISH-MM-5: Implement a Fishery Improvement Mitigation Fund FISH-MM-6: Establish a Shallow-Water Aquatic Habitat Conservation Easement	Significant and unavoidable
FISH-9: Effects of the Project on Green Sturgeon	1, 2, 3	Significant and unavoidable	FISH-MM-5: Implement a Fishery Improvement Mitigation Fund	Significant and unavoidable

Impact	Alternative	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
FISH-10: Effects of the Project on Sacramento Splittail	1, 2, 3	Less than significant	No mitigation required, but the following will monitor Project measures: FISH-MM-1: Conservation of Shallow-Water Vegetated Habitat REC-MM-1: Reduce the Size or Number of Recreation Facilities FISH-MM-2: Site Project Facilities to Avoid Existing Shallow-Water Vegetated Habitat FISH-MM-3: Limit Waterside Construction to Less- Sensitive Time Periods FISH-MM-4: Implement Best Management Practices for Waterside Construction FISH-MM-5: Implement a Fishery Improvement Mitigation Fund FISH-MM-6: Establish a Shallow-Water Aquatic Habitat Conservation Easement	–
FISH-11: Effects of the Project on Other Aquatic Species	1, 2, 3	Less than significant	No mitigation is required	–
VEGETATION AND WETLANDS				
VEG-1: Increase in Freshwater Marsh and Exotic Marsh Habitats	1, 2,3	Beneficial and less than significant	No mitigation is required	–
VEG-2: Loss of Riparian and Permanent Pond Habitats	1, 2,3	Less than significant	No mitigation is required	–
VEG-3: Loss of Upland and Agricultural Habitats	1, 2,3	Less than significant	No mitigation is required	–
VEG-4: Consistency with Local Policies or Ordinances Protecting Biological Resources	1, 2,3	No impact	No mitigation is required	–
VEG-5: Conflict with Provisions of an Adopted HCP/NCCP	1, 2	No impact	No mitigation is required	–
VEG-6: Introduction and Spread of Invasive Plants	1, 2	Less than significant	No mitigation is required	–

Impact	Alternative	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
VEG-7: Loss of Special-Status Plants	1, 2, 3	Significant	VEG-MM-1: Site Project Facilities to Avoid Special-Status Plant Populations VEG-MM-2: Protect Special-Status Plant Populations from Construction and Recreation Activities VEG-MM-3: Develop and Implement a Special-Status Plant Species Monitoring and Mitigation Plan	Less than significant
VEG-8: Loss of Jurisdictional Wetlands on Reservoir Islands	3	Significant	VEG-MM-4: Develop and Implement an Off-Site Mitigation Plan	Less than significant
WILDLIFE				
W-1: Potential Injury or Mortality of, and Potential Loss of Suitable Habitat for, Valley Elderberry Longhorn Beetle	1, 2	Less than significant	No mitigation is required	–
W-1: Potential Injury or Mortality of, and Potential Loss of Suitable Habitat for, Valley Elderberry Longhorn Beetle	3	Significant	W-MM-3: Avoid or Compensate for the Loss of Habitat for the Valley Elderberry Longhorn Beetle	Less than significant
W-2: Potential Injury or Mortality of Western Pond Turtle	1, 2	Less than significant	No mitigation is required	–
W-2: Potential Injury or Mortality of Western Pond Turtle	3	Significant	W-MM-4: Avoid and Minimize Injury and Mortality of Western Pond Turtle	Less than significant
W-3: Loss of Suitable Aquatic and Upland Habitat for Western Pond Turtle	1, 2	Less than significant	No mitigation is required	–
W-3: Loss of Suitable Aquatic and Upland Habitat for Western Pond Turtle	3	Significant	W-MM-5: Compensate for Loss of Habitats for Special-Status and Other Species through an Off-Site Wildlife Habitat Mitigation Plan	Less than significant
W-4: Potential Injury or Mortality of Giant Garter Snake	1, 2	Less than significant	No mitigation is required	–
W-4: Potential Injury or Mortality of Giant Garter Snake	3	Significant	W-MM-6: Avoid and Minimize Injury and Mortality of Giant Garter Snake	Less than significant
W-5: Loss of Suitable Aquatic and Upland Habitat for Giant Garter Snake	1, 2	Less than significant	No mitigation is required	–

Impact	Alternative	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
W-5: Loss of Suitable Aquatic and Upland Habitat for Giant Garter Snake	3	Significant	W-MM-5: Compensate for Loss of Habitats for Special-Status and Other Species through an Off-Site Wildlife Habitat Mitigation Plan	Less than significant
W-6: Loss of Upland Habitats	1, 2	Less than significant	No mitigation is required	–
W-6: Loss of Upland Habitats	3	Significant	W-MM-5: Compensate for Loss of Habitats for Special-Status and Other Species through an Off-Site Wildlife Habitat Mitigation Plan	Less than significant
W-7: Increase in Suitable Wetland Habitats for Nongame Water and Wading Birds	1, 2	Beneficial and less than significant	No mitigation is required	–
W-8: Loss of Foraging Habitats for Wintering Waterfowl	1, 2	Less than significant	No mitigation is required	–
W-8: Loss of Foraging Habitats for Wintering Waterfowl	3	Significant	W-MM-5: Compensate for Loss of Habitats for Special-Status and Other Species through an Off-Site Wildlife Habitat Mitigation Plan	Less than significant
W-9: Increase in Suitable Breeding Habitats for Waterfowl	1, 2, 3	Beneficial and less than significant	No mitigation is required	–
W-10: Loss of Habitats for Upland Game Species	1, 2	Less than significant	No mitigation is required	–
W-10: Loss of Habitats for Upland Game Species	3	Significant	W-MM-5: Compensate for Loss of Habitats for Special-Status and Other Species through an Off-Site Wildlife Habitat Mitigation Plan	Less than significant
W-11: Loss of Suitable Foraging Habitat for Greater Sandhill Crane	1, 2	Less than significant	No mitigation is required	–
W-11: Loss of Suitable Foraging Habitat for Greater Sandhill Crane	3	Significant	W-MM-5: Compensate for Loss of Habitats for Special-Status and Other Species through an Off-Site Wildlife Habitat Mitigation Plan	Less than significant
W-12: Increase in Suitable Roosting Habitat for Greater Sandhill Crane	1, 2	Beneficial and less than significant	No mitigation is required	–
W-13: Loss of Suitable Foraging Habitat for Swainson's Hawk	1, 2	Less than significant	No mitigation is required	–
W-13: Loss of Suitable Foraging Habitat for Swainson's Hawk	3	Significant	W-MM-5: Compensate for Loss of Habitats for Special-Status and Other Species through an Off-Site Wildlife Habitat Mitigation Plan	Less than significant

Impact	Alternative	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
W-14: Loss of Suitable Nesting Habitat for Swainson's Hawk, Cooper's Hawk, and White-Tailed Kite	1, 2	Less than significant	No mitigation is required	–
W-14: Loss of Suitable Nesting Habitat for Swainson's Hawk, Cooper's Hawk, and White-Tailed Kite	3	Significant	W-MM-5: Compensate for Loss of Habitats for Special-Status and Other Species through an Off-Site Wildlife Habitat Mitigation Plan	Less than significant
W-15: Loss of Suitable Breeding/Wintering Habitat for Western Burrowing Owl	1, 2	Less than significant	No mitigation is required	–
W-15: Loss of Suitable Breeding/Wintering Habitat for Western Burrowing Owl	3	Significant	W-MM-5: Compensate for Loss of Habitats for Special-Status and Other Species through an Off-Site Wildlife Habitat Mitigation Plan	Less than significant
W-16: Loss of Suitable Foraging Habitat for Cooper's Hawk, White-Tailed Kite, Western Burrowing Owl, and Loggerhead Shrike	1, 2	Less than significant	No mitigation is required	–
W-16: Loss of Suitable Foraging Habitat for Cooper's Hawk, White-Tailed Kite, Western Burrowing Owl, and Loggerhead Shrike	3	Significant	W-MM-5: Compensate for Loss of Habitats for Special-Status and Other Species through an Off-Site Wildlife Habitat Mitigation Plan	Less than significant
W-17: Loss of Foraging Habitat for Cackling (Aleutian Canada) Goose	1, 2, 3	Less than significant	No mitigation is required	–
W-18: Loss of Suitable Nesting and Foraging Habitat for Northern Harrier and Short-Eared Owl	1, 2	Less than significant	No mitigation is required	–
W-18: Loss of Suitable Nesting and Foraging Habitat for Northern Harrier and Short-Eared Owl	3	Significant	W-MM-5: Compensate for Loss of Habitats for Special-Status and Other Species through an Off-Site Wildlife Habitat Mitigation Plan	Less than significant
W-19: Loss of Winter Foraging Habitat for Tricolored Blackbird	1, 2	Less than significant	No mitigation is required	–
W-19: Loss of Winter Foraging Habitat for Tricolored Blackbird	3	Significant	W-MM-5: Compensate for Loss of Habitats for Special-Status and Other Species through an Off-Site Wildlife Habitat Mitigation Plan	Less than significant
W-20: Change in Acreage of Suitable Nesting Habitat for Tricolored Blackbird	1, 2	Less than significant	No mitigation is required	–
W-20: Change in Acreage of Suitable Nesting Habitat for Tricolored Blackbird	3	Significant	W-MM-5: Compensate for Loss of Habitats for Special-Status and Other Species through an Off-Site Wildlife Habitat Mitigation Plan	Less than significant

Impact	Alternative	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
W-21: Increase in Suitable Habitats for Special-Status Bird Species	1, 2	Beneficial and less than significant	No mitigation is required	–
W-22: Potential Injury or Mortality of Northern Harrier, Cooper’s Hawk, Swainson’s Hawk, White-Tailed Kite, California Black Rail, Greater Sandhill Crane, Western Burrowing Owl, Short-Eared Owl, Loggerhead Shrike, and Non–Special Status Migratory Birds	1, 2	Less than significant	No mitigation is required	–
W-22: Potential Injury or Mortality of Northern Harrier, Cooper’s Hawk, Swainson’s Hawk, White-Tailed Kite, California Black Rail, Greater Sandhill Crane, Western Burrowing Owl, Short-Eared Owl, Loggerhead Shrike, and Non–Special Status Migratory Birds	3	Significant	W-MM-7: Prepare a Construction Implementation Plan to Avoid Impacts on Roosting and Nesting Birds	Less than significant
W-23: Disturbance to Greater Sandhill Cranes and Wintering Waterfowl from Aircraft Operations	1, 2	Significant	W-MM-1: Monitor Effects of Aircraft Flights on Greater Sandhill Cranes and Wintering Waterfowl and Implement Actions to Reduce Aircraft Disturbances of Wildlife	Less than significant
W-24: Potential for Increased Incidence of Waterfowl Diseases	1, 2, 3	Significant	W-MM-2: Monitor Waterfowl Populations for Incidence of Disease and Implement Actions to Reduce Waterfowl Mortality	Less than significant
W-25: Potential Disruption of Waterfowl Use as a Result of Increased Hunting	1, 2, 3	Less than significant	No mitigation is required	–
W-26: Potential Disruption of Greater Sandhill Crane Use of the Habitat Islands as a Result of Increased Hunting	1, 2	Less than significant	No mitigation is required	–
W-27: Increase in Waterfowl Harvest Mortality	1, 2, 3	Less than significant	No mitigation is required	–
W-28: Potential Changes in Local and Regional Waterfowl Use Patterns	1, 2, 3	Less than significant	No mitigation is required	–
W-29: Potential Impacts on Wildlife and Wildlife Habitats Resulting from Delta Outflow Changes	1, 2, 3	Less than significant	No mitigation is required	–
W-30: Loss of Roost Sites and Foraging Habitat for and Potential Injury or Mortality of Bats	1, 2	Less than significant	No mitigation is required	–

Impact	Alternative	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
W-30: Loss of Roost Sites and Foraging Habitat for and Potential Injury or Mortality of Bats	3	Significant	W-MM-5: Compensate for Loss of Habitats for Special-Status and Other Species through an Off-Site Wildlife Habitat Mitigation Plan W-MM-8: Conduct Preconstruction Surveys for Roosting Bats and Compensate for Loss of Roosting Habitat If Bats Are Found	Less than significant
LAND USE AND AGRICULTURE				
LU-1: Inconsistency with Contra Costa County General Plan Policy for Agricultural Lands and Delta Protection Commission Land Use Plan Principles for Agriculture and Recreation	1, 2, 3	Significant and unavoidable	None available	Significant and unavoidable
LU-2: Direct Conversion of Agricultural Land	1, 2, 3	Significant and unavoidable	None available	Significant and unavoidable
LU-3: Displacement of Residences and Structures on Reservoir Islands	3	Less than significant	No mitigation is required	–
RECREATION AND VISUAL RESOURCES				
REC-1: Increase in Hunting on the Project Islands	1, 2, 3	Beneficial and less than significant	No mitigation is required	–
REC-2: Change in Regional Hunter Success Outside the Project Area	1, 2	Less than significant	No mitigation is required	–
REC-3: Increase in Recreation Use-Days for Boating in the Delta	1, 2, 3	Beneficial and less than significant	No mitigation is required	–
REC-4: Change in the Quality of the Recreational Boating Experience in Delta Channels	1, 2, 3	Significant	REC-MM-1: Reduce the Size or Number of Recreation Facilities	Less than significant
REC-5: Increase in Recreation Use-Days for Other Recreational Uses in the Delta	1, 2, 3	Beneficial and less than significant	No mitigation is required	–
REC-6: Reduction in the Quality of Views of Bacon Island and Webb Tract Interiors from Island Levees	1, 2, 3	Less than significant	No mitigation is required	–
REC-7: Potential Conflict with the Scenic Designation for Bacon Island Road	1, 2, 3	Less than significant	No mitigation is required	–

Impact	Alternative	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
REC-8: Reduction in the Quality of Views of Bacon Island and Webb Tract from Adjacent Waterways and from the Santa Fe Railways Amtrak Line	1, 2, 3	Significant and unavoidable	REC-MM-1: Reduce the Size or Number of Recreation Facilities REC-MM-2: Partially Screen Proposed Recreation Facilities and Pump and Siphon Stations from Important Viewing Areas REC-MM-3: Design Levee Improvements, Siphon and Pump Stations, and Recreation Facilities and Boat Docks to Be Consistent with the Surrounding Landscape	Significant and unavoidable
REC-9: Enhanced Views of Bouldin Island from SR 12	1, 2	Beneficial and less than significant	No mitigation is required	–
REC-10: Reduction in the Quality of Views of Bouldin Island and Holland Tract from Adjacent Waterways	1, 2	Significant	REC-MM-1: Reduce the Size or Number of Recreation Facilities REC-MM-2: Partially Screen Proposed Recreation Facilities and Pump and Siphon Stations from Important Viewing Areas REC-MM-3: Design Levee Improvements, Siphon and Pump Stations, and Recreation Facilities and Boat Docks to Be Consistent with the Surrounding Landscape	Less than significant
REC-10: Reduction in the Quality of Views of Bouldin Island and Holland Tract from Adjacent Waterways	3	Significant and unavoidable	REC-MM-1: Reduce the Size or Number of Recreation Facilities REC-MM-2: Partially Screen Proposed Recreation Facilities and Pump and Siphon Stations from Important Viewing Areas REC-MM-3: Design Levee Improvements, Siphon and Pump Stations, and Recreation Facilities and Boat Docks to Be Consistent with the Surrounding Landscape	Significant and unavoidable
REC-11: Increase in Opportunities for Recreation Facility Members to View Island Interiors and Other Areas in the Project Vicinity	1, 2, 3	Beneficial and less than significant	No mitigation is required	–
REC-12: Change in Views Southward from SR 12	3	Less than significant	No mitigation is required	–

Impact	Alternative	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
REC-13: Reduction in the Quality of Views of Holland Tract from the Island Levee	3	Less than significant	No mitigation is required	–
TRAFFIC AND NAVIGATION				
TRA-1: Increase of Traffic and Roadway Level of Service Impact during Construction	1, 2, 3	Less than significant	Mitigation is not required, but the following will reduce Project impacts: TRA-MM-1: Develop and Implement a Traffic Control Plan	Less than significant
TRA-2: Increase of Traffic and Roadway Level of Service Impact during Operation	1, 2, 3	Less than significant	No mitigation is required	–
TRA-3: Potential for Traffic Safety Conflicts during Construction	1, 2, 3	Significant	TRA-MM-2: Clearly Mark Intersections with Poor Visibility in the Project Vicinity	Less than significant
TRA-4: Potential for Traffic Safety Conflicts during Operation	1, 2, 3	Less than significant	No mitigation is required	–
TRA-5: Change in Circulation on or Access to Delta Roadways during Construction	1, 2, 3	Less than significant	No mitigation is required	–
TRA-6: Change in Circulation on or Access to Delta Roadways during Operation	1, 2, 3	Less than significant	No mitigation is required	–
TRA-7: Increase in Boat Traffic and Congestion on Delta Waterways during Operation	1, 2, 3	Significant	REC-MM-1: Reduce the Size or Number of Recreation Facilities	Less than significant
TRA-8: Change in Navigation Conditions on Delta Waterways Surrounding the Project Islands during Operation	1, 2, 3	Less than significant	No mitigation is required	–
TRA-9: Creation of Safety Conflicts on Delta Waterways during Construction	1, 2, 3	Significant	TRA-MM-3: Clearly Mark the Barge and Notify the U.S. Coast Guard of Construction Activities	Less than significant
TRA-10: Increase in the Potential for Safety Problem on Waterways Surrounding the Project Islands	1, 2, 3	Significant	TRA-MM-4: Clearly Post Waterway Intersections, Speed Zones, and Potential Hazards in the Project Vicinity	Less than significant

Impact	Alternative	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
CULTURAL RESOURCES				
CUL-1: Destruction of Buildings and Structures from Demolition on Bacon Island	1, 2, 3	Significant	CUL-MM-1: Prepare and Implement a Historic Properties Treatment Plan CUL-MM-1a: Complete Historic Research, Measured Drawings, and Photographic Documentation of the Bacon Island Rural Historic District CUL-MM-1b: Prepare and Implement an Archaeological Resources Data Recovery Plan CUL-MM-1c: Produce a Publication to Disseminate Historical Information regarding the Bacon Island Rural Historic District to the Public CUL-MM-1d: Prepare a Video That Disseminates Historical Information and Explains the Character-Defining Features of the Bacon Island Rural Historic District to the Public	Less than significant
CUL-2: Disturbance to Archaeological Remains as a Result of Compaction, Inundation, Wave-Induced Erosion, or Habitat Development and Management	1, 2	Significant	CUL-MM-1: Prepare and Implement a Historic Properties Treatment Plan The HPTP will include the following component in addition to those described for Impact CUL-1: CUL-MM-1e: Provide Methods and Guidance for Subsurface Testing in the form of Remote Sensing and Excavation	Less than significant
CUL-2: Disturbance to Archaeological Remains as a Result of Compaction, Inundation, Wave-Induced Erosion, or Habitat Development and Management	3	Significant	CUL-MM-1: Prepare and Implement a Historic Properties Treatment Plan The HPTP will include the following components in addition to those described for Impact CUL-1: CUL-MM-1e: Provide Methods and Guidance for Subsurface Testing in the form of Remote Sensing and Excavation CUL-MM-1g: Prepare and Implement an Archaeological Resources Data Recovery Plan for Site-Specific Resources.	Less than significant

Impact	Alternative	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
CUL-3: Disturbance to Human Remains from Compaction as a Result of Inundation, Wave-Induced Erosion, or Habitat Development and Management, or Vandalism	1, 2, 3	Significant and unavoidable	CUL-MM-1: Prepare and Implement a Historic Properties Treatment Plan The HPTP will include the following component in addition to those described for Impact CUL-1: CUL-MM-1f: Negotiate, Prepare, and Implement a Preburial Agreement with the Most Likely Descendant (as Determined by the Native American Heritage Commission) of Potential Native American Interments Located in Webb Tract Piper Sands in the Project Area	Significant and unavoidable
MOSQUITOES AND PUBLIC HEALTH				
PH-1: Reduction or Elimination of Mosquito Abatement Activities during Full-Storage Periods on Reservoir Islands	1, 2, 3	Beneficial and less than significant	No mitigation is required	–
PH-2: Increase in Abatement Levels on the Habitat Islands and during Partial-Storage, Shallow-Storage, or Shallow Water–Wetland Periods on the Reservoir Islands	1, 2, 3	Significant	PH-MM-1: Develop an Integrated Pest Management Program and Coordinate Project Activities with SJCMVCD and CCCMVCD	Less than significant
PH-3: Increase in Potential Exposure of People to Wildlife Species That Transmit Diseases	1, 2	Less than significant	No mitigation is required	–
AIR QUALITY				
AIR-1. Increase in CO Emissions on the Project Islands during Construction	1, 2, 3	Less than significant	Mitigation is not required, but the following will reduce Project impacts: AIR-MM-1: Perform Routine Maintenance of Construction Equipment AIR-MM-2: Choose Borrow Sites Close to Fill Locations AIR-MM-3: Prohibit Unnecessary Idling of Construction Equipment Engines	–
AIR-2. Increase in CO Emissions on the Project Islands during Project Operation	1, 2, 3	Less than significant	No mitigation is required	–

Impact	Alternative	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
AIR-3. Increase in ROG Emissions on the Project Islands during Construction	1, 2, 3	Significant and unavoidable	REC-MM-1: Reduce the Size or Number of Recreation Facilities AIR-MM-1: Perform Routine Maintenance of Construction Equipment AIR-MM-2: Choose Borrow Sites Close to Fill Locations AIR-MM-3: Prohibit Unnecessary Idling of Construction Equipment Engines	Significant and unavoidable
AIR-4. Increase in ROG Emissions on the Project Islands during Operation	1, 2, 3	Significant	REC-MM-1: Reduce the Size or Number of Recreation Facilities AIR-MM-4: Coordinate with the SJVAPCD and BAAQMD to Reduce or Offset Emissions	Less than significant
AIR-5. Increase in NO _x Emissions on the Project Islands during Construction	1, 2, 3	Significant and unavoidable	REC-MM-1: Reduce the Size or Number of Recreation Facilities AIR-MM-1: Perform Routine Maintenance of Construction Equipment AIR-MM-2: Choose Borrow Sites Close to Fill Locations AIR-MM-3: Prohibit Unnecessary Idling of Construction Equipment Engines	Significant and unavoidable
AIR-6. Increase in NO _x Emissions on the Project Islands during Operation	1, 2, 3	Significant	REC-MM-1: Reduce the Size or Number of Recreation Facilities AIR-MM-4: Coordinate with the SJVAPCD and BAAQMD to Reduce or Offset Emissions AIR-MM-5: Use Electrically Powered Pumps in Lieu of Diesel Powered Pumps	Less than significant
AIR-7. Increase in PM10 Emissions on the Project Islands during Construction	1, 2, 3	Significant	AIR-MM-6. Implement Construction Practices That Reduce Generation of Particulate Matter	Less than significant
AIR-8. Increase in PM10 Emissions on the Project Islands during Operation	1, 2, 3	Beneficial and less than significant	No mitigation is required	–
CLIMATE CHANGE				
CC-1: Increase in CO ₂ e Emissions on Project Islands during Construction	1, 2, 3	Less than significant	No mitigation is required	–

Impact	Alternative	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
CC-2: Increase in CO ₂ e Emissions on Project Islands during Operation	1, 2, 3	Less than significant	No mitigation is required	–
NOISE				
NOI-1: Exposure of Sensitive Receptors to Noise from Recreational Activities	1, 2, 3	Less than significant	No mitigation is required	–
NOI-2: Exposure of Sensitive Receptors to Construction-Related Noise	1, 2, 3	Significant	NOI-MM-1: Limit Construction Hours and Comply with all Applicable Local Noise Standards	Less than significant
NOI-3: Exposure of Sensitive Receptors to Operational Equipment Noise	1, 2, 3	Less than significant	No mitigation is required	–
NOI-4: Exposure of Sensitive Receptors to Noise from Ongoing Maintenance and Habitat Conservation Activities	1, 2, 3	Less than significant	No mitigation is required	–
CUMULATIVE				
CUM-1: Reduction in Delta Consumptive Use	1, 2, 3	Beneficial	No mitigation is required	–
CUM-2: Increased Water Supplies Available for Export	1, 2, 3	Beneficial	No mitigation is required	–
CUM-3: Cumulative Hydrodynamic Effects on Local Channel Velocities and Stages during Maximum Project Diversions	1, 2, 3	Not cumulatively considerable	No mitigation is required	–
CUM-4: Cumulative Hydrodynamic Effects on Local Channel Velocities and Stages during Maximum Project Discharges	1, 2, 3	Not cumulatively considerable	No mitigation is required	–
CUM-5: Cumulative Hydrodynamic Effects on Net Channel Flows	1, 2, 3	Cumulatively considerable	CUM-MM-1: Operate the Project to Prevent Unacceptable Hydrodynamic Effects in the Middle River and Old River Channels during Flows That Are Higher Than Historical Flows	Not cumulatively considerable
CUM-6: Increase in Pollutant Loading in Delta Channels Associated with Recreational Boating	1, 2, 3	Cumulatively considerable and unavoidable	CUM-MM-2: Clearly Post Waste Discharge Requirements, Provide Waste Collection Facilities, and Educate Recreationists regarding Illegal Discharges of Waste REC-MM-1: Reduce the Size or Number of Recreation Facilities	Cumulatively considerable and unavoidable

Impact	Alternative	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
CUM-7: Improved CVP and SWP Water Quality Resulting from Increased Use of Sacramento River Water	1, 2, 3	Beneficial	No mitigation is required	–
CUM-8: Decrease in Cumulative Flood Hazard in the Delta	1, 2, 3	Beneficial	No mitigation is required	–
CUM-9: Decrease in the Need for Public Financing of Levee Maintenance and Repair on the Project islands	1, 2, 3	Beneficial	No mitigation is required	–
CUM-10: Cumulative Decrease in the Risk of Structural Failure of Roadways and Utilities	1, 2, 3	Beneficial	No mitigation is required	–
CUM-11: Cumulative Adverse Impacts on Listed Fish Species	1, 2, 3	Cumulatively considerable and unavoidable	FISH-MM-1: Replacement of Habitat Lost during Construction of Project Facilities FISH-MM-2: Implement a Fishery Improvement Mitigation Fund FISH-MM-3: Establish a Shallow-Water Aquatic Habitat Conservation Easement	Cumulatively considerable and unavoidable
CUM-12: Increase in Wetland and Riparian Habitats in the Delta	1, 2, 3	Beneficial	No mitigation is required	–
CUM-13: Cumulative Increase in Foraging Habitat for Wintering Waterfowl in the Delta	1, 2, 3	Beneficial	No mitigation is required	–
CUM-14: Cumulative Loss of Herbaceous Habitats in the Delta	1, 2, 3	Not cumulatively considerable	No mitigation is required	–
CUM-15: Cumulative Temporary Loss of Riparian Habitat in the Delta	1, 2, 3	Not cumulatively considerable	No mitigation is required	–
CUM-16: Cumulative Conversion of Agricultural Land	1, 2, 3	Cumulatively considerable and unavoidable	No reasonable mitigation is available	Cumulatively considerable and unavoidable
CUM-17: Increase in Recreation Opportunities in the Delta	1, 2, 3	Beneficial	No mitigation is required	–
CUM-18: Enhancement of Waterfowl Populations and Increased Hunter Success in the Delta	1, 2, 3	Beneficial	No mitigation is required	–

Impact	Alternative	Significance before Mitigation	Mitigation Measure	Significance after Mitigation
CUM-19: Reduction in the Quality of Views of the Reservoir Islands	1, 2, 3	Cumulatively considerable and unavoidable	REC-MM-1: Reduce the Size or Number of Recreation Facilities REC-MM-2: Partially Screen Proposed Recreation Facilities and Pump and Siphon Stations from Important Viewing Areas REC-MM-3: Design Levee Improvements, Siphon and Pump Stations, and Recreation Facilities and Boat Docks to Be Consistent with the Surrounding Landscape	Cumulatively considerable and unavoidable
CUM-20: Destruction of or Damage to Prehistoric Archaeological Sites in the Delta	1, 2, 3	Not cumulatively considerable	No mitigation is required	–
CUM-21: Destruction of or Damage to Historic Districts Representing Agricultural Labor Camp Systems in the Delta	1, 2, 3	Cumulatively considerable	CUL-MM-1: Prepare and Implement a Historic Properties Treatment Plan	Not cumulatively considerable
CUM-22: Increase in Abatement Levels during Partial-Storage, Shallow-Storage, or Shallow-Water Wetland Periods on the Reservoir Islands under Cumulative Conditions	1, 2, 3	Cumulatively considerable	Mitigation Measure PH-MM-1: Develop an Integrated Pest Management Program and Coordinate Project Activities with SJCMVCD and CCCMVCD	Not cumulatively considerable
CUM-23: Cumulative Increase in Mosquito Abatement Needs Resulting from Implementation of Future Projects, Including the Project	1, 2, 3	Cumulatively considerable and unavoidable	Mitigation Measure PH-MM-1: Develop an Integrated Pest Management Program and Coordinate Project Activities with SJCMVCD and CCCMVCD	Cumulatively considerable and unavoidable
CUM-24: Increase in Cumulative Production of Ozone Precursors and CO in the Delta	1, 2, 3	Cumulatively considerable and unavoidable	REC-MM-1: Reduce the Size or Number of Recreation Facilities Air-MM-4: Coordinate with the SJVAPCD and BAAQMD to Reduce or Offset Emissions	Cumulatively considerable and unavoidable